EP EPICA

EP Epica Owner’s Handbook

GM Holden Ltd, ABN 84 006 893 232 (hereinafter Holden)

Change of name, address or ownership

In the event of a Safety Recall, or for various reasons, Holden may need to contact you as the owner of this vehicle.

If you have recently changed your address, or name, or purchased this vehicle second-hand, please help us to help you by taking a few minutes to fill in and mail the forms at the beginning of the Service/warranty booklet.

For information about GM Holden's privacy policy or to update owner details online, please visit Holden's website at www.holden.com.au

Note Please refer to the inside front cover of the Service/ warranty booklet for the Vehicle Identification Certificate.

Printed in Australia
Part No. 92243655
July 2010 (MY10 EP Epica. Print 3)

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We thank you for choosing Holden and want to assure you of our continuing interest in your driving pleasure and satisfaction.

This handbook applies to the current Epica model. Therefore, due to different models and options, you may find reference in this Handbook to some equipment not fitted to your own vehicle.

Please note that all information, illustrations and specifications in this Handbook are based on the latest production information available at the time of printing. Holden reserves the right to make changes at any time without notice and without incurring any obligation.

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*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

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CHAPTER 1A

Dashboard

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*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

DASHBOARD LAYOUT

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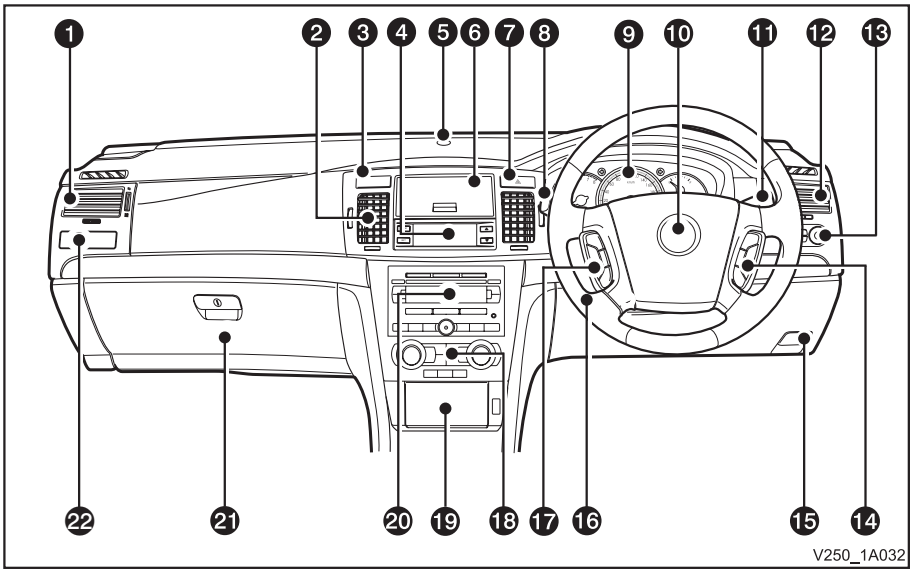
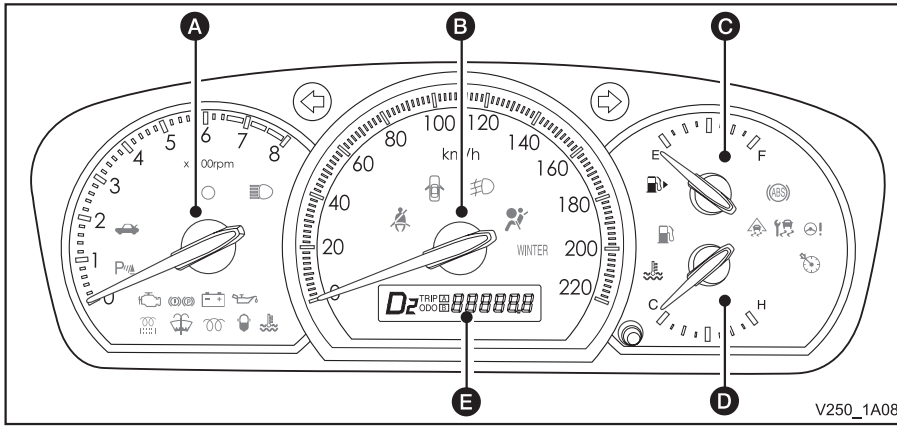


INSTRUMENTATION

INSTRUMENTS



Ⓐ Tachometer

The tachometer shows engine speed in thousands of revolutions per minute (RPM).

Ⓑ Speedometer

The speedometer shows vehicle speed in kilometres per hour (km/h).

Ⓒ Fuel gauge

The fuel gauge shows the level of fuel in the fuel tank when the ignition is on:

E = empty, **F** = full.

Note

- Additions of fuel less than 15 litres can take up to 10 minutes to register on the fuel gauge. Larger amounts show almost immediately. This prevents fuel movement from registering on the gauge when cornering.
- Petrol engines: Avoid letting the tank run empty; this can cause damage to the catalytic converter.
- Diesel engines: if run dry, the fuel system must be bled. Refer to *Diesel fuel filter* in chapter 6.

Refer to *Specifications* in chapter 8, for fuel tank capacity.

Ⓓ Temperature gauge

The temperature gauge indicates the engine coolant temperature when the ignition is on. Stop-start driving in heavy traffic, driving at high speed in warm weather, hill climbing or towing may cause the needle to move toward the **H**. This is normal and no cause for concern. However, if the needle moves all the way to **H** and remains there for more than 30 seconds, stop the vehicle as soon as it is safe to do so. Refer to *Engine overheating* in chapter 6.

H = hot, **C** = cold.

INSTRUMENTATION cont.

Ⓔ Odometer/tripmeter

The odometer records kilometres travelled since the vehicle was built. The tripmeter shows the kilometres travelled from the start of a particular trip.

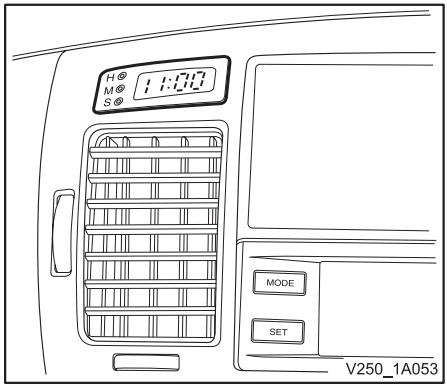
There are two independent tripmeters which can be reset to measure the amount of kilometres travelled from a point.

To toggle between Trip A and Trip B, press the tripmeter button located next to the temperature gauge.

To reset the selected tripmeter, press and hold the tripmeter button.

Digital clock

When the ignition is in the **ACC** or **ON** position, the digital clock displays the time. There are 3 adjusting buttons:



H Hour button.

- To advance 1 hour, press the **H** button.
- To advance more than 1 hour, press and hold the **H** button until the correct hour is reached.

M Minute button.

- To advance 1 minute, press the **M** button.
- To advance more than 1 minute, press and hold the **M** button until the correct minute is reached.

S Set button.

To reset the time to the nearest hour, press the **S** button.

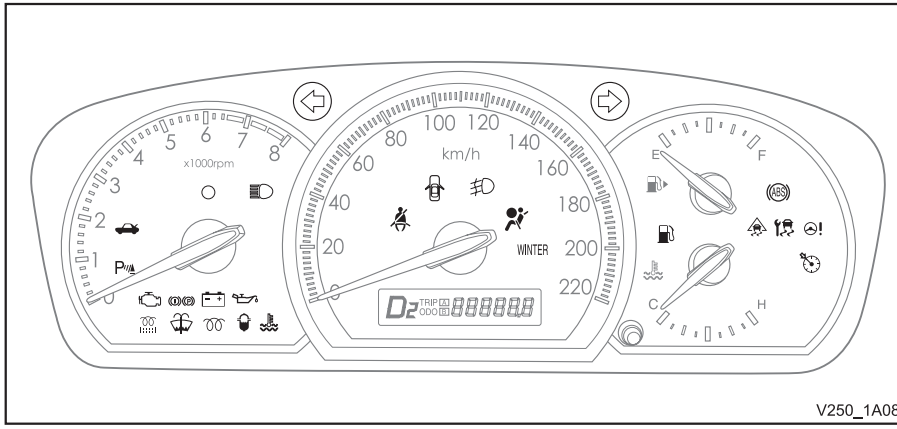
- If the **S** button is pressed when the time is between 8:00 and 8:29, the display will round down to 8:00.
- If the **S** button is pressed when the time is between 8:30 and 8:59, the display will rounded up to 9:00.

Note The vehicle's clock will need to be reset each time the battery is disconnected.

WARNING/REMINDER INDICATIONS

WARNING LAMPS AND REMINDERS

The following warning lamps and reminder indications may appear on the instrument panel. They appear as illuminated icons. Some warning/reminder indications are accompanied by a chime.



Battery warning lamp

The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started, to check that the lamp is working.

If the warning lamp illuminates when driving, this indicates that the battery is not charging correctly.

The warning lamp will remain illuminated until the problem has been rectified.

Contact your Holden Dealer.

Engine oil pressure warning lamp

The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started, to check that the lamp is working.

If the warning lamp illuminates when driving, it indicates that the oil pressure is low.

WARNING
Engine damage may result if you continue driving.

Stop when safe, switch off the engine and check the engine oil level. Refer to *Engine oil level* in chapter 7.

Do not run the engine when this warning is illuminated. If the oil level is normal, have the system checked at the nearest Holden Dealer.

WARNING/REMINDER INDICATIONS cont.

Brake fail and park brake warning

The Ⓘ(P) warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started (unless the park brake is applied), to check that the lamp is working.

The Ⓘ(P) warning lamp also illuminates when the park brake is applied.

If the Ⓘ(P) warning lamp does not extinguish or illuminates when driving and the park brake is released, it indicates a fault with the brakes. Carefully stop the vehicle on the side of the road immediately. Do not proceed until satisfied that braking is possible or that the cause of the problem has been rectified.

Note The Ⓘ(P) warning lamp also indicates low brake fluid. Check the brake fluid level. Refer to *Under bonnet checks* in chapter 7.

The Ⓘ(P) warning lamp will remain illuminated until the problem has been rectified.

Airbag and Supplemental Restraint System (SRS)

The warning lamp flashes several times when the ignition is switched on to check that the lamp is working and that the system is functional.

If the warning lamp illuminates when driving, it indicates that the airbag system or seatbelt pretensioner system may not function correctly in an accident. Contact your Holden Dealer immediately.

Note The warning lamp illuminates after an accident if the airbag(s) and/or pretensioners have activated.

The warning lamp will remain illuminated until the problem has been rectified.

Refer to *Supplemental Restraint System* in chapter 3.

Passenger airbag and seatbelt pretensioners sensing system

The warning lamp illuminates for 6 seconds when the ignition is switched on to check the lamp is working.

The warning lamp illuminates if the passenger seat is unoccupied, it indicates that the passenger front and side airbags are disabled.

Low fuel

If the warning lamp illuminates when driving, it indicates that the fuel level is low.

- Petrol engines: Avoid letting the tank run empty; this can cause damage to the catalytic converter.
- Diesel engines: if run dry, the fuel system must be bled. Refer to *Diesel fuel filter* in chapter 6.

WARNING/REMINDER INDICATIONS cont.

Glow plug indicator* (Diesel engine only)

Illuminates when the ignition is switched to the **ON** position and will stay illuminated until the engine is sufficiently warmed. Refer to *Engine starting* in chapter 4. If the lamp illuminates while driving contact your Holden Dealer.

Note The time the lamp stays illuminated depends on the engines temperature.

Diesel particle filter (DPF)* (Diesel engine only)

Flashing (in vehicles with diesel particle filter): previous driving conditions did not allow the automated cleaning process to take place. As soon as the road and traffic situations permit it, increase speed to more than 40 km/h without dropping engine speed below 2,000 rpm. This procedure runs automatically and can take up to 25 minutes. The control indicator goes off as soon as cleaning is complete. Refer to *Emission control* in chapter 5.

Note The engine cooling fan and rear window demister come on during cleaning.

Water in fuel filter* (Diesel engine only)

Illuminates when the water level in fuel filter is excessive. If this occurs, drain the water from the fuel filter as soon as possible. Refer to *Diesel fuel filter* in chapter 6.

The warning lamp will extinguish when draining is completed. If the lamp remains illuminated after draining the water, contact your Holden Dealer.

Note

- Before starting the engine after draining, a priming operation must be performed. Refer to *Diesel fuel filter* in chapter 6.
- The diesel fuel filter will be drained by your Holden Dealer when the vehicle is serviced. Refer to the Service/warranty booklet.

WARNING
The engine and fuel system may be seriously damaged if you keep driving while the warning lamp is illuminated. Drain the fuel filter or contact your Holden Dealer as soon as possible.

Engine coolant temperature* (Diesel engine only)

The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started, to check that the lamp is working.

If the engine coolant warning illuminates while driving, it indicates the engine coolant temperature is excessively hot. It is advisable to stop the vehicle as soon as it is safe to do so. If the lamp does not extinguish, contact your Holden Dealer.

WARNING
Do not continue driving with the engine coolant temperature lamp illuminated or the temperature gauge needle in the red area. The engine is too hot. Continued operation of an overheated engine will result in severe engine damage. Refer to *Engine overheating* in chapter 6.

WARNING/REMINDER INDICATIONS cont.

Electronic Stability Program (ESP®) operation lamp

The operation lamp illuminates when the ignition is switched on and extinguishes when the engine is started to check that the lamp is working.

If the operation lamp flashes while driving, it indicates that the Electronic Stability Program (ESP®) is actively helping the vehicle with road grip and stability.

The operation lamp illuminates when ESP® is turned off. Using the button (refer to *Electronic Stability Program (ESP®)* in chapter 4).

Note When ESP® is turned off, the lamp illuminates as a warning to the driver that the ESP® system will not operate if required.

Refer to *Electronic Stability Program (ESP®)* in chapter 4.

Electronic Stability Program (ESP®) warning lamp

The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started to check that the lamp is working.

If the warning lamp does not extinguish or illuminates when driving, it indicates a malfunction with the ESP®. Contact your Holden Dealer immediately.

Refer to *Electronic Stability Program (ESP®)* in chapter 4.

ABS fault warning lamp

The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started, to verify that no monitored ABS defects are present and to check that the lamp is working.

If the warning lamp does not extinguish or illuminates when driving, it indicates a malfunction with the ABS. Contact your Holden Dealer as soon as possible.

Note The vehicle's brake system will still operate conventionally with the anti-lock operation disabled. Refer to *Anti-lock brake system* chapter 4.

The warning lamp will remain illuminated until the problem has been rectified.

Speed Sensitive Power Steering (SSPS) lamp* (Diesel vehicles only)

The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started to check that the lamp is working. If the lamp does not illuminate, does not extinguish or illuminates while driving, contact your Holden Dealer as soon as possible. Refer to *Driving precautions* in chapter 4.

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WARNING/REMINDER INDICATIONS cont.

Malfunction Indicator Lamp (MIL)

This vehicle is fitted with an emission monitoring system. The warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started, to check that the lamp is working.

If the lamp illuminates and stays on when driving, the system has an emission related fault. Although the vehicle may still be drivable and not require towing, take the vehicle to a Holden Dealer as soon as possible.

Diesel engines: The MIL will also illuminate to indicate that there is a malfunction in the Diesel Particle Filter* (DPF). If this happens, contact your Holden Dealer. Refer to *Emission control* in chapter 5.

If the lamp flashes while driving, reduce the vehicle's speed and load, until the lamp stops flashing, then take the vehicle to a Holden Dealer as soon as possible.

Driver's seatbelt warning lamp

The warning lamp reminds the driver to fasten their seatbelt.

The warning lamp illuminates then flashes until the seatbelt is fastened.

Note

- The lamp will flash again if the driver's seatbelt is unfastened.
- A chime will sound if the vehicle's speed reaches 25 km/h and the drivers's seatbelt is unfastened. It will continue to chime until the seatbelt is fastened.

Passenger's seatbelt warning lamp*

The warning lamp is shown in the passenger sensing system display and reminds the front passenger to fasten their seatbelt.

The warning lamp illuminates for 6 seconds when the ignition is switched on to check the lamp is working.

The warning lamp then flashes until the seatbelt is fastened.

Note

- The lamp will flash again if the passenger's seatbelt is unfastened.
- A chime will sound if the vehicle's speed reaches 25 km/h and the passenger's seatbelt is unfastened. It will continue to chime until the seatbelt is fastened.

Fog lamp indicator*

The indicator lamp illuminates when the fog lamps are on. Refer to *Lights* further on in this chapter.

High beam indicator lamp

The indicator lamp illuminates when the headlamp high beams are on.

WARNING/REMINDER INDICATIONS cont.

Turn signals

The appropriate arrow flashes when the lever on the right side of the steering column is moved up or down with the ignition switched on.

Note

- Both arrows flash when the hazard warning flasher is switched on. Refer to *Steering, horn, hazard warning* further on in this chapter.
- The turn signal lamps flash at a quicker rate if a bulb has blown.

Security warning lamp

The **O** warning lamp flashes (approximately once every second) when the vehicle security system is activated and extinguishes when the ignition is switched on.

Door ajar warning lamp

The warning lamp illuminates when any door is open.

Boot open warning lamp

The warning lamp illuminates when the boot lid is open or not securely latched.

Cruise control warning lamp

The warning lamp illuminates when the cruise control is turned on. Refer to *Cruise control* further on in this chapter.

Low washer fluid warning lamp*

The warning lamp illuminates when the wash fluid level is low. Refer to *Wipers and washers* further on in this chapter.

WINTER

Winter mode warning lamp*

The WINTER warning lamp illuminates when Winter mode is selected. Refer to *Transmission operation* in chapter 4.

Automatic transmission gear display

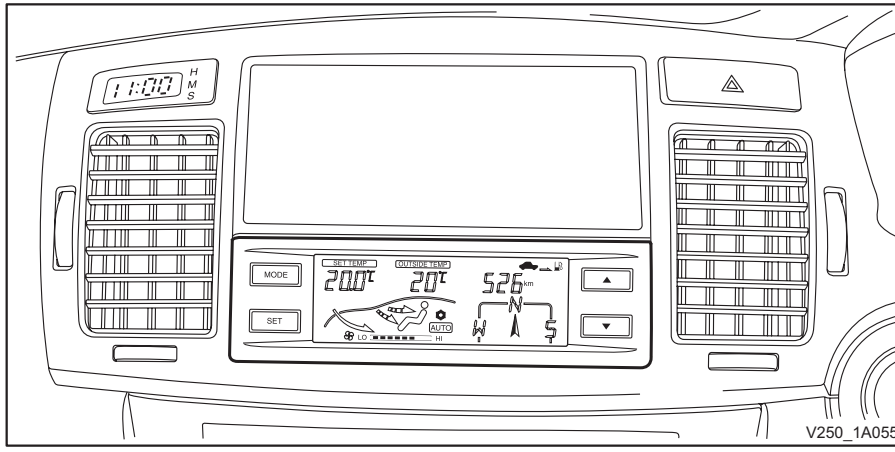
Displays the position of the automatic transmission shift select lever and when in active select mode the currently selected gear.

Rear park assist*

The P warning lamp illuminates when the ignition is switched on and extinguishes when the engine is started to check that the lamp is working. If the rear park assist warning lamp illuminates while driving, it indicates there is a problem with the rear park assist system. Contact your Holden Dealer.

*DRIVER INFORMATION DISPLAY (DID)**

Information display



The Driver Information Display (DID) provides visual information for the trip computer, climate control system and the compass when the ignition switch is in the **ON** position.

TRIP COMPUTER

Press the **MODE** button on the left-hand side of the information display to scroll between the trip computer displays.

To reset average speed, driving time or average fuel consumption, press the **MODE** button for more than 2 seconds.

Use the ▲ and ▼ buttons to adjust the selected values.

To change the information display from km to miles or from °F to °C proceed as follows:

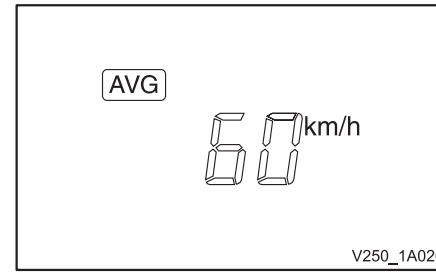
1. Press the **SET** button for more than 2 seconds then the temperature display will blink.
2. Press the **SET** button again, the distance display will blink.
3. Press the ▲ and ▼ button to change the distance display (km. mile or °F. °C).

Note When the ignition is switched on, the trip computer displays the same functions as when the ignition was last switched off.

Average speed

Average speed shows the average speed (while the engine is running) since the last average speed reset.

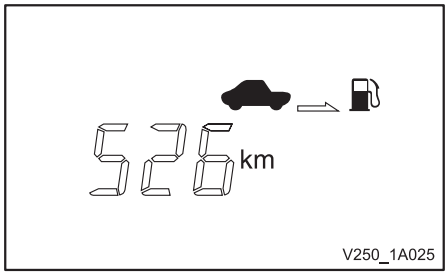
To reset only Average Speed to zero, press and hold the **MODE** button for more than 2 seconds.



DRIVER INFORMATION DISPLAY (DID) cont.*

Driving distance for remaining fuel

Driving distance for remaining fuel is an estimate of how far the vehicle will travel on the current amount of fuel. It is based on previous fuel usage and is frequently updated. As conditions become suited to more economical driving the range may increase, for example from city to highway driving.



Note

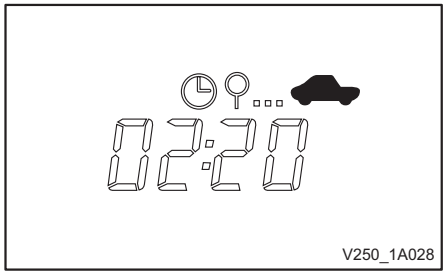
- Movement of fuel in the tank can cause the reading to fluctuate when the fuel level is low.
- If the fuel remaining is less than 50 km, **LO** will be shown on the information display.

Driving time

Driving time displays the total time driving.

To reset the driving time to zero, press and hold the **MODE** button for more than 2 seconds.

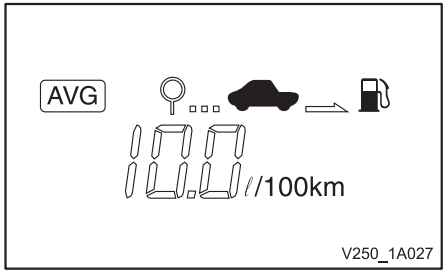
Note The driving time will be reset to 00:00 after being displayed to 99:59.



Average fuel consumption

This mode calculates the average fuel consumption from the total fuel used and the distance travelled since the last average fuel consumption reset.

To reset the average fuel consumption to zero, press and hold the **MODE** button for more than 2 seconds.



Note

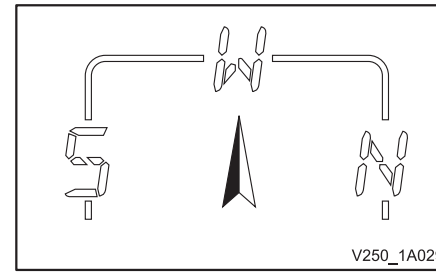
- Average fuel consumption is reset to 10.0 if the battery is disconnected.
- The Average Fuel Consumption can vary according to the driving conditions, driving pattern or vehicle speed.

DRIVER INFORMATION DISPLAY (DID) cont.*

Compass

The compass displays the vehicle's driving direction (N, NE, E, SE, S, SW, W, NW).

Note The direction will be displayed when the ignition is on.



Compass calibration

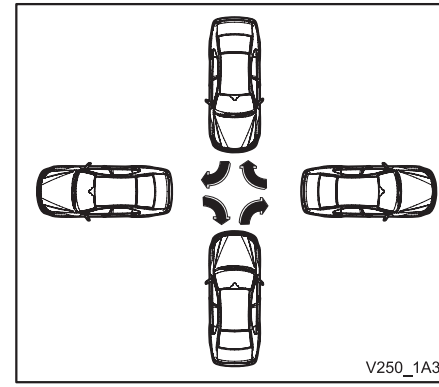
The compass needs to be calibrated the first time it is used or when the battery has been disconnected.

Follow these steps to calibrate the compass:

1. Press the **MODE** and **SET** button simultaneously for more than 2 seconds, the compass display then flashes.
2. To calibrate the compass, drive the vehicle around slowly in a complete circle within 90 seconds.

   Note

   - If enough space is not available to turn around 1 circle, turn the vehicle as shown.
   - To cancel the compass calibration mode press the **SET** button twice in quick succession.
   - If the compass display continues to flash, turn the vehicle around again slowly until it stops flashing.
3. The calibration is complete when the display stops flashing.



STEERING, HORN, HAZARD WARNING

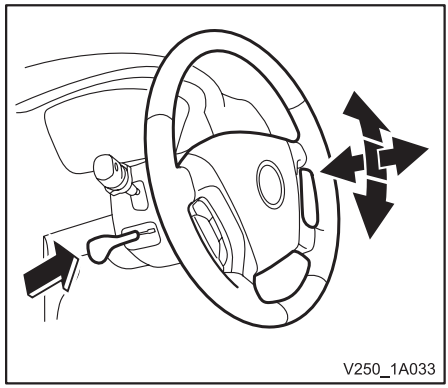
TILT/REACH STEERING

WARNING
Do not attempt to adjust the steering wheel while driving.

To adjust the steering wheel, pull the lock lever on the side of the steering column backwards (towards you) and hold.

Grasp the steering wheel and move it as required. It can be moved up or down, pulled towards you or pushed away from you.

When the steering wheel is in the preferred position, release the lever. Ensure the steering wheel and release lever have locked securely before driving.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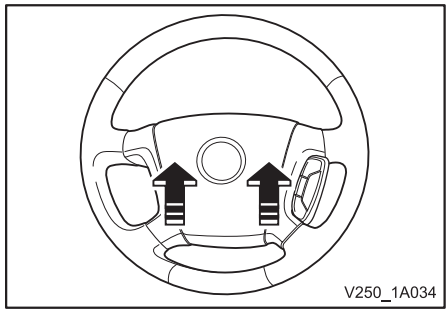
HORN

The horn is activated by pressing either side of the steering wheel horn pad.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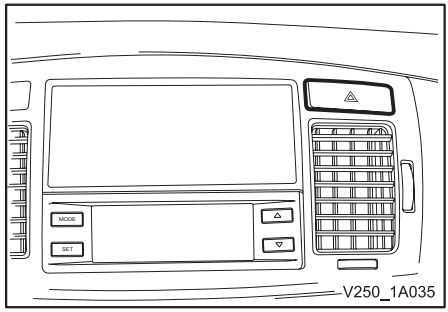
HAZARD WARNING FLASHER

Press the ⚠ button to turn the hazard warning flasher on and off. The hazard warning flasher works regardless of the ignition position. When the hazard warning flasher is turned on, all turn signals flash continuously.

Use the hazard warning flasher to warn other drivers any time the vehicle becomes a traffic hazard, day or night.

Note Use of the hazard warning flashers while the vehicle is moving is illegal in some States.



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WIPERS AND WASHERS

OPERATING THE WIPERS AND WASHERS

The lever on the left side of the steering column controls the wipers and washers. They operate when the ignition is switched to the **ON** position.

WARNING
Never operate the wipers on dry glass, as this will damage the rubber and scratch the glass.

Wipers off (OFF)

Intermittent wipe (INT)

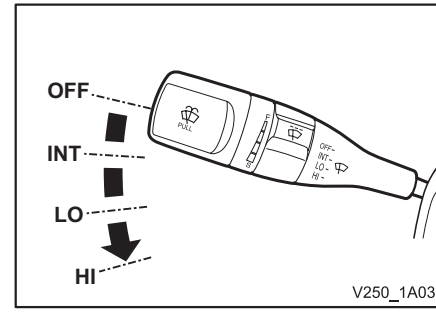
Move the lever down to the first stop to set the wipers to the intermittent position.

Slow speed (LO)

Move the lever down to the second stop.

Fast speed (HI)

Move the lever down to the third stop.

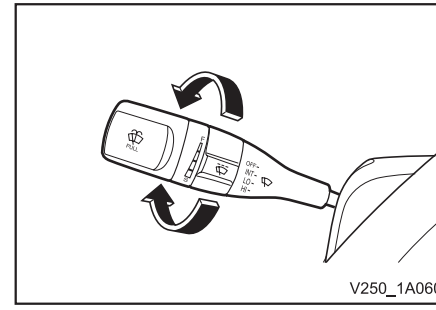


Variable intermittent wipers

The frequency of the intermittent wipe can be adjusted by rotating the collar, marked . Rotate the collar up for more frequent wipes, or down for less frequent wipes.

Mist function

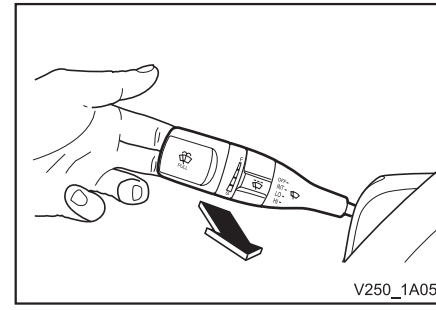
Move the lever down to just before the **INT** position. The wipers will cycle while holding the lever in this position and return to the **OFF** position when released.



Washer

To spray washer fluid onto the windscreen, pull the lever towards you and hold as long as required. The wipers switch on automatically for a short time if they are not already operating.

When topping up the washer fluid, refer to *Washer fluid level* in chapter 7.

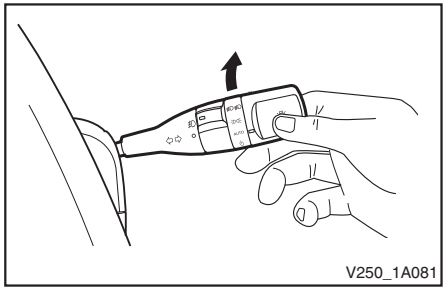


LIGHTS

EXTERIOR LIGHTS

Light switch

Rotate the end of the lever to one of the following positions to turn the headlamps and park lamps on or off.



⏻ = Off

Turns the headlamps and park lamps off.

AUTO = Automatic headlamps

The parking lamps or headlamps will turn on automatically depending on the outside light levels.

Note AUTO is the default position for the lamp switch.

To turn the automatic lamp control off, turn the switch to position ⏻ off. The switch will return to the AUTO position once released.

To turn the automatic lamp control on, turn the switch to position ⏻ off again.

= Park lamps

Turns on the park, tail, rear number plate lamps and instrument panel lighting.

= Headlamps

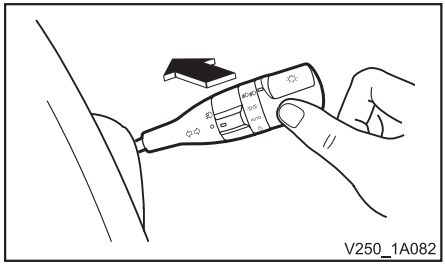
Turns on the headlamps (in addition to all the park lamps).

Note

- The headlamps will turn off automatically when the key is removed and the driver's door is opened.
- To ensure the automatic headlamp control works correctly, avoid covering the sunlight sensor. Refer to *Dashboard layout* in chapter 1A.

High/low beam

With the headlamps on, push the lever on the right side of the steering column away from you until you feel a click, then release it. The headlamps change from low to high beam. The high beam indicator lamp illuminates on the instrument panel. To return to low beam, pull the lever towards you.



To flash the high beam lamps, pull the lever towards you. The lamps remain on high beam as long as the lever is held.

Note The high beam lamps can be flashed even if the headlamps and/or ignition are switched off.

LIGHTS cont.

Daytime running lamps*

The daytime running lamps illuminate automatically when the engine is running.

The daytime running lamps will turn off when:

- The ignition is switched off, or
- The park lamps are turned on, or
- The high/low beam lamps are turned on.

Battery saver

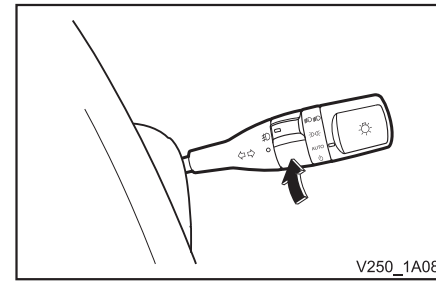
The battery saver is to prevent the battery from being discharged.

When you leave the light switch in the ≡D or ≡D position, remove the key, and open the driver's door, the lights will turn off automatically.

Note If you remove the key and open the driver's door when the dome lamp, map lamp and/or boot lamp are on, they will turn off automatically after approx. 10 minutes.

≠D = Fog lamps*

- To turn the fog lamps on, rotate the collar up with the ignition switched on and the headlamp switch set to ≡D or ≡D. The collar will then return to its original position.
- To turn the fog lamps off, rotate the collar up again.



Note

- The ≠D indicator lamp illuminates when the fog lamps are on.
- Any time the front fog lamps* are turned on, the park lamps and low beam headlamps will turn on automatically.

Fog lamps provide a different illumination of the road to the usual headlamp beam. Depending on the density of the fog, a different combination of lamps will improve vision. In very heavy fog, vision may be improved by turning the headlamps off, and just having the park lamps and fog lamps on. When the fog lamps are turned on, the fog lamp indicator ≠D illuminates on the instrument panel.

Note

- Driving speed should be reduced in fog.
- Check your State laws regarding use of fog lamps when driving.

LIGHTS cont.

Turn signals

To signal a turn, push the lever on the right side of the steering column in the same direction you turn the steering wheel.

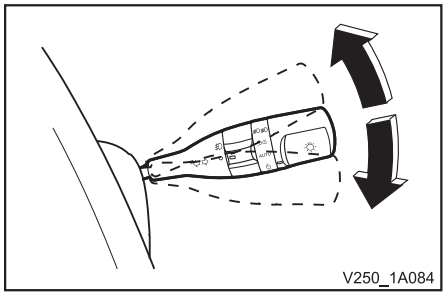
The turn signals will self cancel once the turn has been made.

Note In some turns the steering wheel is not turned far enough to cancel the turn signal.

To signal a lane change move the lever part way and hold it.

The lever will return to its normal position when released.

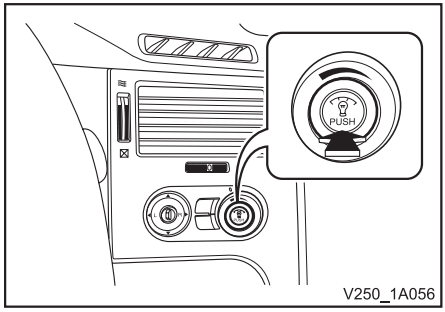
A green arrow on the instrument panel flashes when the turn signals are operating.


V250_1A084

= Instrument lighting dimmer

The instruments are automatically illuminated when the park lamps or headlamps are switched on.

To adjust the instrument lighting, push to extract the knob, turn anticlockwise to brighten and clockwise to dim. Push again to retract the knob.



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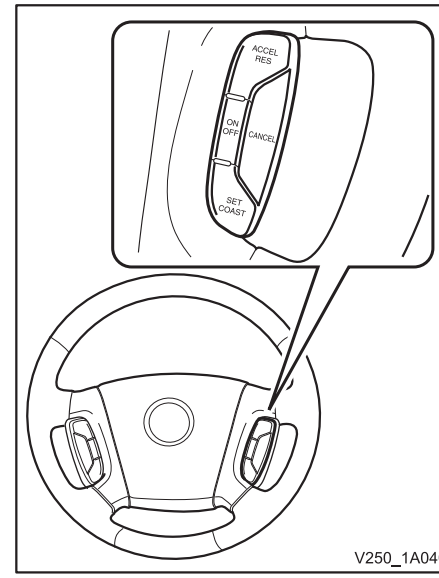
CRUISE CONTROL

OPERATING CRUISE CONTROL



The cruise control maintains the vehicle's speed without having your foot on the accelerator pedal.

The cruise control buttons are located on the right side of the steering wheel.

Note The cruise control will only operate at speeds above 40 km/h.

Setting a speed

1. Press the **ON OFF** button on the steering wheel.

Note Petrol Engine only: The lamp illuminates on the instrument panel to indicate that the cruise control is turned on.

2. When travelling at the desired speed, press the **SET COAST** button. The accelerator pedal can now be released.

Note Petrol Engine: The lamp remains illuminated.
Diesel Engine: The lamp illuminates on the instrument panel to indicate that the cruise control is active.

Adjusting the set speed

- To reduce the set speed, press and hold the **SET COAST** button.
- To increase the set speed, press and hold the **ACCEL RES** button.
- After releasing it, the new speed will be maintained.

Note To change the speed in small amounts, press the corresponding button momentarily.

Pausing the cruise control

Press the brake pedal or press the **CANCEL** button once. This deactivates the cruise control.

To regain the stored speed, momentarily press the **ACCEL RES** position.

Note Holding it in the **ACCEL RES** position will cause the vehicle to accelerate.

CRUISE CONTROL cont.

Turning the cruise control off

Press the **ON OFF** button.

The lamp extinguishes.

Note Switching off the ignition deactivates cruise control and clears the speed memory.

WARNING

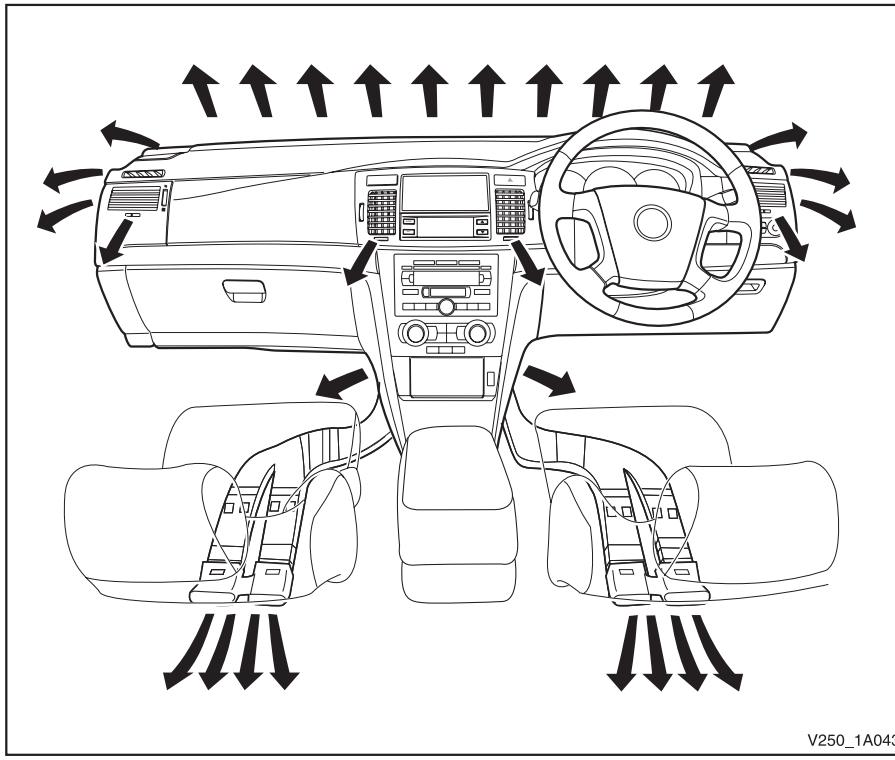
- Do not use the cruise control when road or driving conditions require varying speeds. A constant speed is not practical in heavy or varying traffic or on winding, slippery or rough roads.
- Remember that when the cruise control is maintaining the vehicle's speed, taking your foot off the accelerator pedal does not reduce the speed. To deactivate the cruise control, press either the brake pedal, press the **ON OFF** button or press the **CANCEL** button once. This deactivates the cruise control.
- The cruise control does not apply the vehicle's brakes. The vehicle may gain speed when going down steep hills.
- When climbing steep hills (particularly when towing), the vehicle may lose speed. In this case, use the accelerator pedal. Release the accelerator pedal when the speed returns to the set speed.
- The cruise control is cancelled if the Electronic Stability Program (ESP) becomes active.

VENTILATION SYSTEM

The vehicle features a flow-through ventilation system for comfort. Under reasonable conditions, it should not be necessary to open the windows at any time. Outside air is drawn into the vehicle through the opening between the bonnet and the windscreen, unless recirculation has been selected. Do not allow this grille to become clogged with debris, such as leaves or snow. Any leaves should be removed each time the vehicle is washed (recommended weekly).

VENTS

The air can be directed to different types of vents.

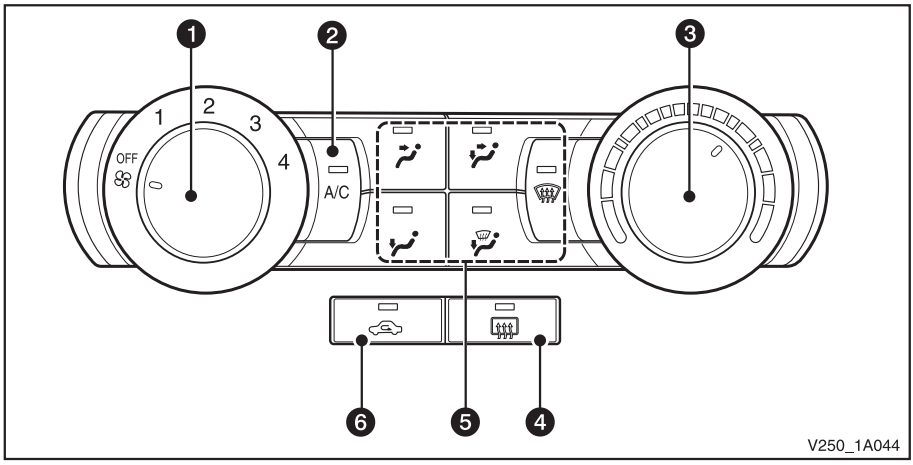


The face vents have adjustable vanes which can be adjusted up or down and left or right to allow directional control of air flow.

These vents have shut-off doors which can also be used to adjust the air volume to suit individual comfort. For example, air flow at the centre vents can be reduced to enhance air flow at the side vents.

The floor-level and demister outlets are fixed, as these direct air to the windscreen, feet and side windows.

MANUAL HEATER, AIR CONDITIONING



❶ Fan speed control
❷ Air conditioning (A/C) button
❸ Temperature control
❹ Rear window demister
❺ Mode control
❻ Recirculation button

Fan speed

Turn the control ❶ clockwise to increase the fan speed or anticlockwise to reduce it. Turn it anticlockwise to turn the fan off.

Note The air conditioning will not work when the fan is off.

A/C button

Press the **A/C** button ❷ to switch the air conditioning on and off.

The lamp in the button illuminates when the air conditioning is on.

Note

- The fan must be on before the air conditioning will work.
- When A/C is switched on, the air conditioning removes moisture and heat from the air.

Temperature control

Turn the control ❸ clockwise (warmer) or anticlockwise (cooler).

MANUAL HEATER, AIR CONDITIONING cont.

Mode control

Select one of the air flow modes ❺ bellow.

Face mode directs air to all the dashboard vents.

Bi-level mode directs approximately half of the air to the dashboard vents, then directs the remaining air to the front and rear floor outlets. Cooler air is directed to the upper outlets and warmer air to the floor outlets.

Floor mode directs most of the air to the front and rear floor outlets, with some air directed to the outer dashboard vents and a little air directed to the windscreen and side windows.

Floor and windscreen demist mode directs the air between the windscreen and front and rear floor outlets, with some air directed to the outer dashboard vents and side window demist outlets.

Windscreen demist mode directs most of the air to the windscreen, with some air directed to the side window demist outlets and outer dashboard vents.

Note When is selected, the air conditioning is switched on automatically to optimise demisting performance. In this mode the air conditioning cannot be switched off.

Recirculation button

Press the button ❻ to switch the air intake between recirculated air and outside air.

The lamp in the button illuminates when recirculation is selected.

Note

- Recirculation uses interior air and is therefore not recommended for long periods of time.
- Do not use recirculation if occupants are smoking.

Rear window demist button

Press the button ❹ to turn the rear demister on. Press the button again to turn the rear demister off.

The lamp in the button illuminates when the rear demister is switched on.

Note

- To avoid unnecessary electrical consumption, the rear demister switches off automatically.
- External rear view mirror heating is activated when the rear demister is turned on.

Demisting

If the side windows or windscreen fog up on a cold day:

1. Turn the fan ❶ to a high speed.
2. Set the mode control ❺ to , which automatically turns on the air conditioning.
3. Turn the temperature control ❸ to a warm setting.

This circulates warm, dehumidified air throughout the vehicle, demisting the windows.

Note The air conditioning reduces humidity to improve demisting performance.

MANUAL HEATER, AIR CONDITIONING cont.

Air conditioning

For a quick cool down when first entering the vehicle on a hot day:

1. Press the **A/C** button ❷ to switch on the air conditioning.
2. Press the button ❻ to switch on the recirculation.
3. Turn the temperature control ❸ to the coldest setting.
4. Turn the fan ❶ to a high speed.
5. Open the windows to allow the hot air to escape.
6. After a minute or two, close the windows, as the air conditioning works most effectively with the windows closed.
7. When the interior cools down, switch off the recirculation and select . This will maintain the best comfort conditions during extended driving.

Note The coolest temperature is achieved when recirculation is selected. This can be used in slow city traffic or when the vehicle is stationary in very hot weather. Occasionally switch recirculation off to allow outside air to enter the vehicle.

MANUAL HEATER, AIR CONDITIONING cont.

NOTES

Unsealed roads (prevention of dust entry)

When following another vehicle on unsealed roads (and the dust is airborne), select recirculation. If the dust is not airborne select outside air (recirculation off) and set the fan to high speed. This builds up positive air pressure to help prevent dust entry. Ensure in both cases that all windows are closed.

Note Recirculation uses interior air and is therefore not recommended for long periods of time.

Hissing

Occasionally a slight hissing sound may be heard for a short time when the air conditioning switches off and pressure in the system equalises. This is normal.

Water

Water condensation forms when the air conditioning is operating. This condensation is discharged underneath the vehicle. Therefore, traces of clean, clear water on the ground underneath the vehicle are normal under these circumstances.

Engine performance/fuel economy

The air conditioning uses power from the vehicle's engine. A small decrease in engine power and a minimal increase in fuel consumption will be noticed when the air conditioning is in use. When driving at high speeds, the air conditioning compressor may switch off momentarily so that full engine power is available.

Cigarette smoke

If occupants are smoking, it is recommended that the recirculate position not be used.

Regular running

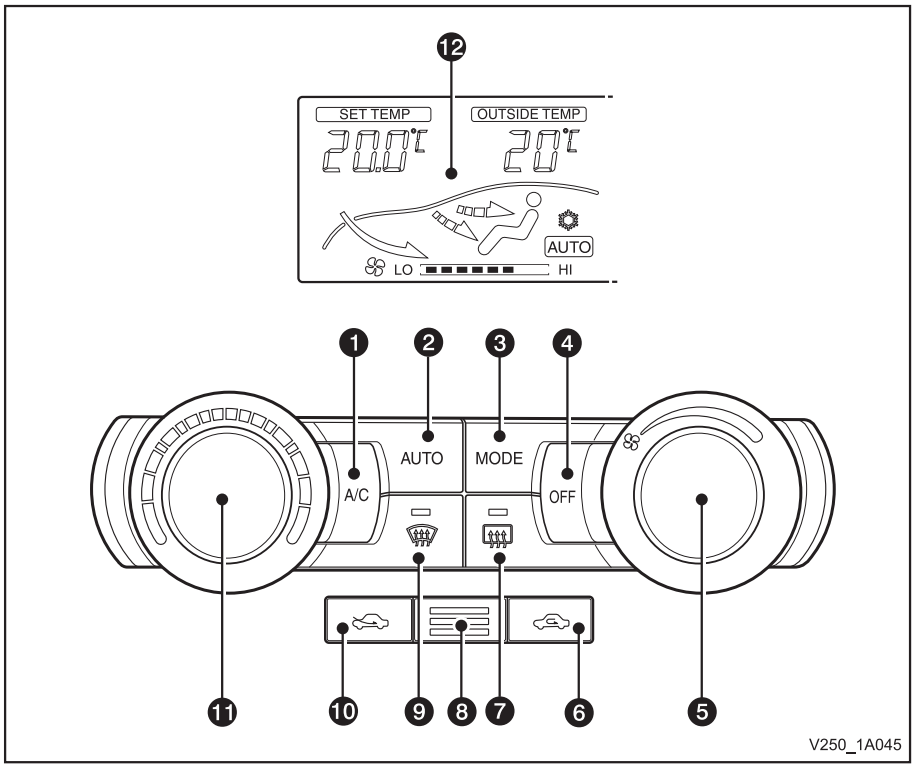
It is important that once every 2 weeks, with the engine running, the air conditioning is switched on for 5 to 10 minutes (even in winter) to lubricate the air conditioning system seals.

Pollen/dust filter

A passenger compartment air filter is fitted to filter outside air entering the vehicle. The filter removes contaminants such as pollen and dust. The pollen/dust filter will be serviced as per the service schedule by your Holden Dealer.

*CLIMATE CONTROL**

The climate control panel is located in the centre of the dashboard. It is designed to maintain the interior of the vehicle at the desired temperature.



1. Air conditioning (**A/C**) button
2. **AUTO** button
3. **MODE** button
4. **OFF** button
5. Fan speed control
6. Recirculation button
7. Rear window demister
8. Temperature sensor
9. Windscreen demister
10. Fresh air button
11. Temperature control
12. Information display

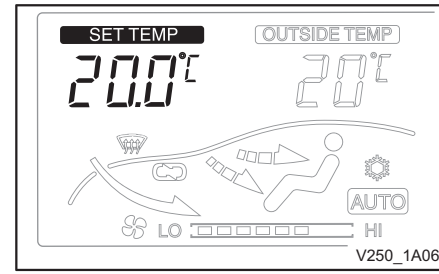
CLIMATE CONTROL cont.*

Temperature control

Turn the temperature control ⓫ clockwise (warmer) or anticlockwise (cooler). The temperature can be set between 18 °C and 32 °C (a setting between 22 °C and 24 °C is recommended).

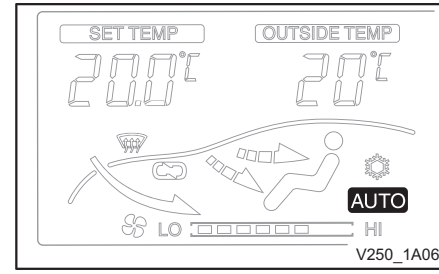
The temperature setting is shown on the information display.

Note If turning the temperature control past 32 °C, the information display will show **HI** (hottest). Turning it past 18 °C, will show **LO** (coolest).



AUTOMATIC MODE

1. Start the engine.
2. Press the **AUTO** button ❷ if the **AUTO** icon is not already displayed on the information display.
3. Use the temperature control to adjust the temperature.
4. Allow the system to stabilise for a few minutes.
5. Adjust the angle of the air vents to your personal requirements. For example, point the vents directly at your body or face for initial cooling and then point them away for a more general effect once you have cooled down.

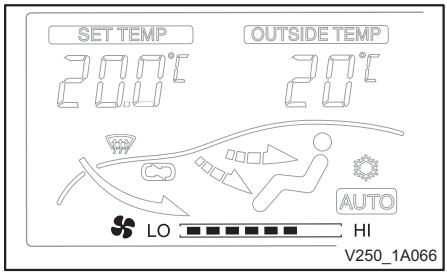


Note

- The system must be on to make any adjustments.
- The setting does not change between the ignition being switched off or on (except if extreme hot or cold is selected). The setting only needs changing when wanting to alter the comfort level.
- Adjusting any of the controls manually can impede the system in maintaining the set temperature. It is designed to operate with a minimum of manual adjustment. The **AUTO** icon on the information display extinguishes when the system is not operating automatically.
- Manual selection of any mode will revert the system into semi-automatic operation.
- To return to full automatic operation, press the **AUTO** button ❷.

CLIMATE CONTROL cont.*

Fan



Turn the fan speed ❺ control clockwise to increase the fan speed or anticlockwise to decrease the fan speed.

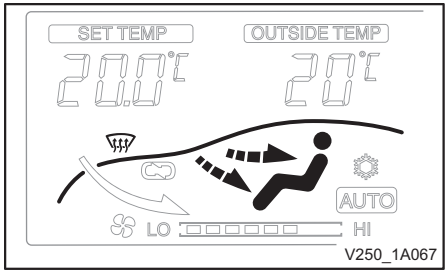
The fan speed is shown on the information display.

Note

- The climate control sets the fan speed automatically. When adjusting the fan speed, the system will revert to semi-automatic operation. The fan speed animation will appear on the information display.
- When the engine is not running, the fan speed is limited to conserve the battery.
- To return to full automatic operation, press the **AUTO** button ❷.

MANUAL MODE

Mode buttons



Press the mode button ❸ to switch between the following positions:

Face mode directs air to all the dashboard vents.

Bi-level mode directs approximately half of the air to the dashboard vents, then directs most of the remaining air to the front and rear floor outlets. Cooler air is directed to the upper outlets and warmer air to the floor outlets.

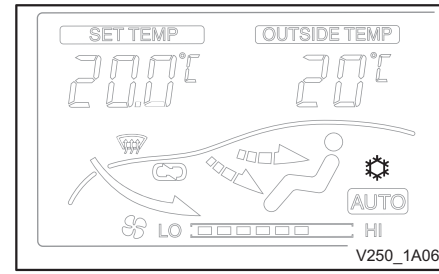
Floor mode directs most of the air to the front and rear floor outlets, with some air directed to the outer dashboard vents and a little air directed to the windscreen and side window demist outlets .

Floor and windscreen demist mode directs the air between the windscreen and front and rear floor outlets, with some air directed to the outer dashboard vents and side window demist outlets.

The setting is shown on the information display.

CLIMATE CONTROL cont.*

A/C button



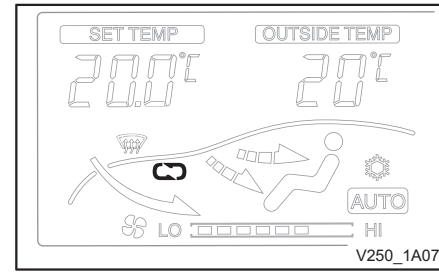
Press the **A/C** button ❶ to switch the air conditioning on and off.

The indicator lamp on the button illuminates and ❄ appears on the information display when the air conditioning is on.

Note

- To conserve fuel, the air conditioning may be switched off in cold weather.
- When the air conditioning is switched on, it removes moisture and heat from the air.
- Air conditioning should be switched on for at least 5 to 10 minutes once every 2 weeks to lubricate the air conditioning seals, even in winter.

Recirculation button



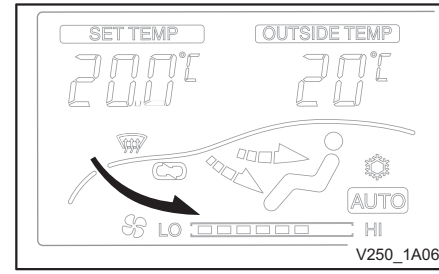
Press the button ❻ to switch the air intake to recirculated air mode.

appears on the information display.

Note

- Recirculation uses interior air and is therefore not recommended for long periods of time.
- If recirculation mode is used for an extended period of time, the system will automatically let some fresh air into the cabin for ventilation.
- Do not use recirculation if occupants are smoking.

Fresh air button

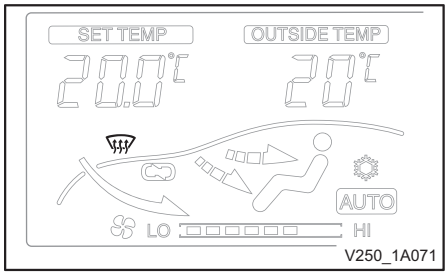


Press the button ❿ to switch the air intake to fresh air mode.

appears on the information display.

CLIMATE CONTROL cont.*

Windscreen demist button



The climate control cannot determine if the windscreen needs demisting.

Press the button ❾ to demist the windscreen and side windows. The system changes the outlets to demist and switches on the air conditioning.

The lamp on the button illuminates and appears on the information display when selected.

Press the button again to turn the demister off.

Note When is selected, the air conditioning is switched on automatically to optimise demisting performance. In this mode the air conditioning cannot be switched off.

Rear window demist button

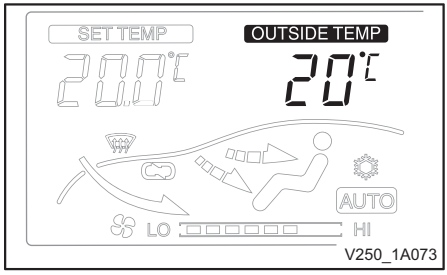
Press the button ❼ to turn the rear demister on. Press the button again to turn the rear demister off.

The lamp on the button illuminates when selected.

Note

- To avoid unnecessary electrical consumption, the rear demister switches off automatically.
- External rear view mirror heating is activated when the rear demister is turned on.

Outside temperature display



The outside temperature is displayed on the information display.

The outside temperature sensor is located in front of the radiator and relies on air moving across the sensor. It can be affected by radiant heat when the vehicle is stationary.

OFF button

Press the OFF button ❹ to switch the system off.

Press the AUTO, **A/C**, button or turn the fan speed dial to switch it back on.

Note When the system is off, recirculation and the rear window demister can still be switched on.

CLIMATE CONTROL* cont.

NOTES

What the system does

In automatic operation the system responds quickly to cooling and heating requirements. It is not necessary to set a cooler or hotter temperature than required to ensure fast cooling or heating.

The system should be left in automatic operation, so that it can:

- turn the air conditioning on and off,
- vary the temperature of the air entering the cabin,
- recirculate interior air or take air in from outside the vehicle,
- vary the fan speed,
- select the vents through which the air is delivered.

The angle of the vents may need adjusting manually, at various times to direct cool air onto your body on hot days, or past your body on mild days.

Engine performance/fuel economy

The air conditioning uses power from the vehicle's engine. A small decrease in engine power and a minimal increase in fuel consumption will be noticed when the air conditioning is in use. When driving at high speeds, the air conditioning compressor may switch off momentarily so that full engine power is available.

Adjusting the temperature

When the climate control system has stabilised and you wish to adjust the setting, it is recommended that the adjustment be made 1 degree at a time until the desired comfort level is reached. Comfort settings depend on clothing, acclimatisation and the angle at which you have directed the vents.

Quick cool down

To aid the climate control when first entering the vehicle on a hot day, open the windows to allow the hot air to escape. After a minute or two, close the windows to allow the system to work more effectively.

Hissing

Occasionally a slight hissing sound may be heard for a short time when the air conditioning switches off and pressure in the system equalises. This is normal.

Water

Water condensation forms when the air conditioning is operating, this condensation is discharged underneath the vehicle. Therefore, traces of clean, clear water on the ground underneath the vehicle are normal under these circumstances.

CLIMATE CONTROL cont.*

Unsealed roads (prevention of dust entry)

When following another vehicle on unsealed roads (and the dust is airborne), select recirculation. If the dust is not airborne select fresh air and set the fan to high speed. This builds up positive air pressure to help prevent dust entry. Ensure in both cases that all windows are closed.

Note Recirculation uses interior air and is therefore not recommended for long periods of time.

Sensors

The climate control uses three different sensors to maintain the desired temperature.

- The vehicle's sunlight sensor monitors the solar radiation and uses the information to maintain the selected temperature when operating in the AUTO mode by initiating needed adjustments to the temperature, the fan speed and the air delivery system. The recirculation mode will also be activated, as necessary. Do not cover the sunlight sensor. Refer to *Dashboard layout* previously in this chapter.
- The outside temperature sensor is located in front of the radiator and relies on air moving across the sensor. It can be affected by radiant heat when the vehicle is stationary.
- The in-car temperature sensor ❽ is located on the climate control panel. This measures the temperature inside the vehicle. The automatic climate control uses this sensor to receive information. It is important not to cover the sensor (for example, with stickers) to make sure it will function accurately.

Switching the climate control off

If the climate control is switched off:

- background noises may still be noticed coming from the system. It continues to operate to ensure that when the system is switched back on, it will be as close as possible to the temperature set before it was switched off.
- outside air is still selected. This may result in the interior becoming too hot or too cold. If this is the case, select recirculation.

Cigarette smoke

If occupants are smoking, it is recommended that the recirculate position not be used.

Regular running

It is important that once every 2 weeks, with the engine running, the air conditioning is switched on for 5 to 10 minutes (even in winter) to lubricate the air conditioning system seals.

Pollen/dust filter

A passenger compartment air filter is fitted to filter outside air entering the vehicle. The filter removes contaminants such as pollen and dust. The pollen/dust filter will be serviced as per the service schedule by your Holden Dealer.

NOTES

CHAPTER 1B

Audio

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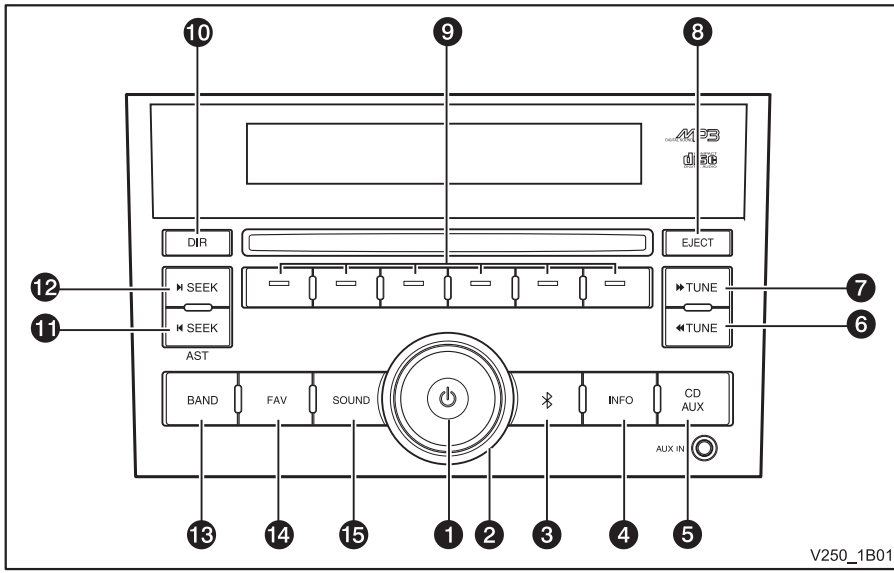
*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

OVERVIEW

SINGLE CD PLAYER CONTROLS

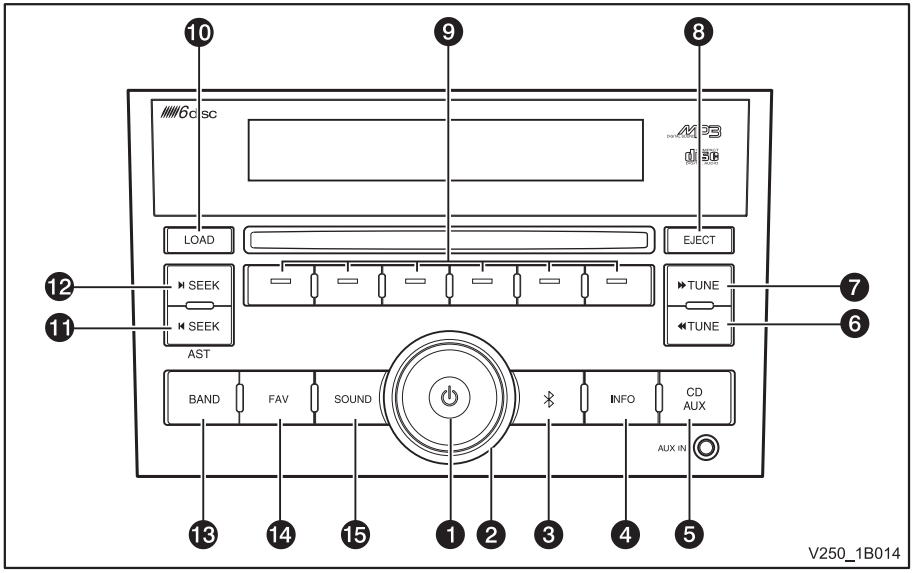


Display and functions:

1. POWER and mute rotary button
2. VOLUME button
3. Bluetooth® button
4. INFO button
5. CD/AUX button
6. TUNE and previous button
7. TUNE and next button
8. EJECT disc button
9. Function buttons
10. DIR button
11. SEEK tuning button
12. SEEK tuning button
13. BAND button
14. FAV button
15. SOUND button

OVERVIEW cont.

SIX CD PLAYER* CONTROLS

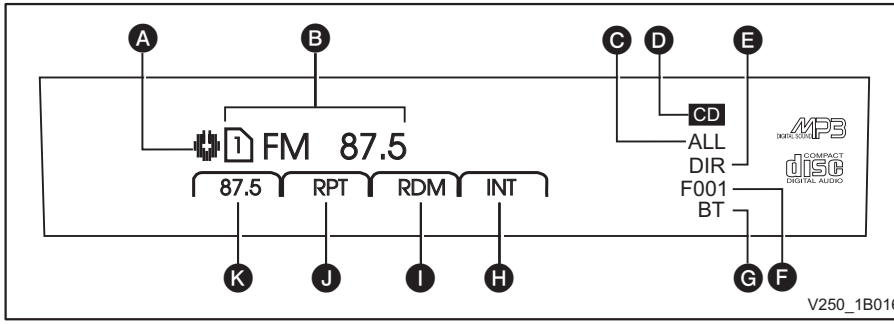


Display and functions:

1. POWER and mute rotary button
2. VOLUME button
3. Bluetooth® button
4. INFO button
5. CD/AUX button
6. TUNE and previous button
7. TUNE and next button
8. EJECT Disc button
9. Function buttons
10. LOAD button
11. SEEK tuning button
12. SEEK tuning button
13. BAND button
14. FAV button
15. SOUND button

OVERVIEW cont.

AUDIO DISPLAY SCREEN

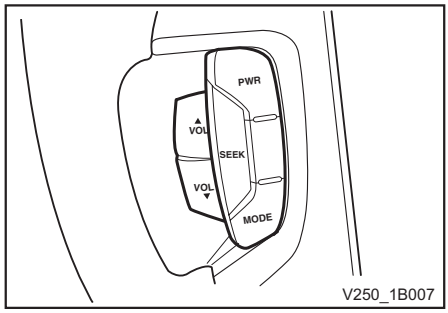


Display screen layout:

- Ⓐ MP3/WMA disc play indicator
- Ⓑ Radio mode indicator
- Ⓒ Directories on the CD
- Ⓓ CD inserted indicator
- Ⓔ Directory number
- Ⓕ File number
- Ⓖ Bluetooth® connection indicator
- Ⓗ Intro function indicator
- Ⓘ Random function indicator
- Ⓙ Repeat function indicator
- Ⓚ Radio frequency indicator

STEERING WHEEL REMOTE CONTROLS

Power button ON/OFF and mute function



1. To turn the audio system ON using the steering wheel remote control, press the **PWR** button.
2. Pressing the power button again will enable the mute function or disable the mute function.
3. To turn OFF the audio system, press and hold the power button.

Mode button/transition

1. To change the mode function using the steering wheel remote control, press the **MODE** button.

   Each time the **MODE** button is pressed, the mode function will change in the sequence shown:

SEEK button: in radio mode

Next preset station:

1. Press the **SEEK** button for less than 0.5 second to select the next preset station.

Seek tuning up:

1. To automatically select the next strongest radio frequency from the current frequency, press and hold the **SEEK** button for more than 0.5 second.

SEEK button: in CD mode

Track up:

1. To play the next available audio track on the current CD press the **SEEK** button once for less than 0.5 second.

   Each time the **SEEK** button is pressed, the audio system will advance to the next available audio track.
2. If the **SEEK** button is pressed when the last audio track on a CD is being played, the audio system will return to the first audio track on that CD.

STEERING WHEEL REMOTE CONTROLS cont.

Cue (fast forward)

1. To search for a point within the current audio track being played, press and hold the **SEEK** button for more than 0.5 second.

   The playback will increase speed to 6 times normal playback speed.
2. Normal playback will resume when the **SEEK** button is released.

Volume UP and DOWN button

1. To increase the audio system volume, press the ▲ button.

   The volume will increase and the volume level will be shown in the display screen. The maximum volume level that can be displayed is 50.
2. To decrease the audio system volume, press the ▼ button.

   The volume will decrease and the volume level will be shown on the display screen.

IMPORTANT INFORMATION

Security code

Your audio unit includes an electronically coded security system. This security system relies on a unique PIN Code indicated on your security card, to enable operation of your audio unit. The PIN Code will only need to be entered if the vehicle's battery has been disconnected or if the audio unit has been removed from the vehicle. Refer to the security release procedure for the instructions of this procedure.

As the PIN Code is the only means of enabling operation of the audio unit, we recommend that the Security Card is kept in a secure location.

Note

- Do not leave the security card in the glovebox of your vehicle.
- The PIN Code should be written down and kept with other important documents.

If the Security Card is lost and the PIN Code has not been recorded, the PIN Code can be requested from your GM Holden Dealer. Proof of ownership will be requested before the PIN Code is supplied. There may be a charge for this service.

Security release procedure

Audio system PIN Code:

1. Switch the ignition to the **ON** position.
2. Press the ⏻ power mute rotary button ❶ while simultaneously holding down the **INFO** button ❹ and the leftmost function buttons ❾ to enter the security mode.
3. Numbers 1 to 6 will appear on the display.
4. Enter the PIN code obtained from the security card using the function buttons.

Example:

If the PIN code belonging to the audio system is 3651.

Press function button 3 – **- - - 3** is displayed.

Press function button 6 – **- - 36** is displayed.

Press function button 5 – **- 365** is displayed.

Press function button 1 – **3651** is displayed.

5. Press the ⏻ power mute rotary button ❶.

If the security code is correct, the security lock is released and the radio is turned off.

IMPORTANT INFORMATION cont.

Care of your audio system

Your audio system has been developed and manufactured with great care and should be treated with care.

Observing the recommendations listed below will prevent your warranty from expiring prematurely and ensure your enjoyment for many years. Heed the following when using your audio system:

- Never try to open the audio system. Improper handling may damage the audio system.
- Never use aggressive chemicals, cleaning liquids or agents to clean the audio system. To clean your audio system, use a soft cloth moistened with a mild soap solution.
- Do not paint or colour the audio system. Paint may make moving parts sticky and impair correct functionality.
- Do not store combustible liquids, gases or explosives in the same room with the audio system, its parts or accessories.

The audio system should only be serviced by an approved repairer. Incorrect installation or servicing of the audio system may have dangerous consequences and result in your warranty becoming void.

Audio system faults

In case of faulty operation, contact your Holden Dealer.

SWITCHING ON/OFF

Power on

When the power is off press the ⏻ power mute rotary button ❶ to activate the audio system. The radio, CD or MP3 function will be shown on the display screen. The operating mode will be the same as before the audio system was turned off.

Power off

When the power is on, press and hold the ⏻ power and mute rotary button ❶ for more than 1 second to turn the system off.

AUDIO SETTINGS

Volume control

Rotate the VOLUME button ❷ clockwise to increase the volume and anticlockwise to decrease the volume. The volume level will appear as a bar on the display screen.

After a period of 5 seconds of inactivity, the display screen will return to the original content.

Volume mute

When the power is on, press the ⏻ power mute rotary button ❶ briefly to activate the audio mute function. The mute function can be deactivated by pressing the power and mute rotary button ❶.

Sound mode selection

To select the required sound mode, press the **SOUND** button ⓯.

Bass adjustment

Press the function button under “Bass” and turn the VOLUME button ❷ clockwise or anti-clockwise to adjust the bass level.

Midrange tone adjustment

Press the function button under “Mid” and turn the VOLUME button ❷ clockwise or anti-clockwise to adjust the midrange tone level.

Treble tone adjustment

Press the function button ❾ under “Treb” and turn the VOLUME button ❷ clockwise or anti-clockwise to adjust the treble tone level.

Note

- The audio system can be operated with the ignition key in the **ACC** or **ON** position.
- The disc **EJECT** button ❽ remains active to allow a disc to be ejected after the power has been turned off.

The audio system can be activated by:

- Pressing the ⏻ power mute rotary button ❶.
- Inserting a CD or MP3 disc.
- Pressing the **BAND** button ⓭.
- Pressing the **CD/AUX** button ❺.

AUDIO SETTINGS cont.

Fader control

Fader control adjusts the volume separation between the front and rear audio speakers. To select the required sound mode, press the **SOUND** button ⓯.

Press the function button ❾ under “Fad” and turn the VOLUME button ❷ clockwise or anti-clockwise to adjust the fader level.

Balance control

Balance control adjusts the volume separation between the left and right audio speakers.

To select the required sound mode, press the **SOUND** button ⓯.

Press the function button ❾ under “Bal” and turn the VOLUME button ❷ clockwise or anti-clockwise to adjust the balance level.

After a period of 5 seconds of inactivity, the display screen will return to the original content.

Preset EQ selection

EQ is used to select between pre-defined sound equaliser settings.

1. To select the required sound mode, press the **SOUND** button ⓯.
2. Press the function button ❾ under “P EQ” and the preset EQ menu displays.
3. Press the function button ❾ under the preset EQ mode you want.
   To cancel the selected preset EQ press the P-EQ button again.

EQ modes are POP, Rock, Country, Voice, Jazz and Classic.

After a period of 5 seconds of inactivity, the display screen will return to the original content.

AUDIO SETTINGS cont.

Audio mode selection

Press the **BAND** button ⓭ to listen to the radio when in another mode.

Radio band change

1. Press the **BAND** button ⓭ to select AM1, AM2 or AM-A.
2. Press the **BAND** button ⓭ to select FM1, FM2 or FM-A.

Manual tuning

1. Choose either AM or FM band using the **BAND** button ⓭.
2. Use the **TUNE** buttons ❻ or ❼ to increase or decrease the frequency one step at a time.

Automatic tuning

1. Use the **SEEK** buttons ⓫ or ⓬ to search for a receivable station.
2. To search for the next receivable station push and hold for more then one second to either seek up or down.

Automatic tuning sensitivity

When a seek tuning search is initiated, the radio automatically searches for the stronger (local) stations. After the radio has searched the entire band range once (i.e. 87.5 - 108.0 MHz for FM and 522 - 1710 kHz for AM), it will automatically switch to searching for all stations (including weaker stations).

Favourite preset memory

It contains 6 favourite pages and stores up to 48 stations regardless of AM or FM band.

Store a station by using the following procedure:

1. Seek a station or tune manually.
2. Select the favourite page by pressing the **FAV** button ⓮.
3. Press and hold the function button ❾ under the number where you want to store this station.

Recall favourite preset stations

You can listen to the stations stored in the favourite preset by using the following procedure.

1. Select the favourite page by pressing the **FAV** button ⓮.
2. Press the function button ❾ under the favourite preset number of the station you want to listen to.

Auto-store

Press **SEEK** buttons ⓫ or ⓬ for more than 3 seconds. The radio will begin the auto-store operation and store 12 stations automatically.

RADIO OPERATION

RADIO RECEPTION

Due to varying reception locations, audio systems have performance limitations that may on occasions create the impression that your radio is malfunctioning.

AM and FM

There are two types of radio broadcasts in Australia. Amplitude Modulation (AM) in which the amplitude of the signal is varied to produce the sound and Frequency Modulation (FM) in which the frequency is varied to produce the sound.

Range

AM broadcasts tend to follow the earth's curvature and also reflect from the upper atmosphere which enables long range reception especially after sunset.

FM transmissions are basically line-of-sight (similar to TV signals) and are reflected by buildings, mountains etc. but not by the upper atmosphere.

Interference

Interference is caused by local electrical disturbances. This can affect the amplitude of the signal being received.

AM signals are more prone to this type of interference than FM signals. This type of interference has little or no effect on the frequency of the received signal thus AM is susceptible to interference from power lines, fluorescent lighting, neon signs, traffic light control circuits, overhead tram wires and electrical storms.

With FM reception these amplitude variations are filtered out leaving a relatively clear signal, (refer to *Peculiarities of FM mobile reception* below) making this one of the major advantages of FM broadcasts.

Peculiarities of FM mobile reception

A mobile FM receiver can not be expected to continuously provide the quality of FM reception you may have experienced on your home receiver. Contrary to popular opinion, FM broadcasts are not static free, and although your new radio has a built-in electronic interference absorption circuit some static will be evident from time to time especially in areas without a direct line of sight to the transmitter.

Your radio is also equipped with a soft mute function. The purpose of this is to attenuate the treble and audio level in weak signal areas to reduce the annoying background hiss which is customary to weaker FM reception. There are two phenomena peculiar to FM reception:

- **Flutter** – As FM signals reflect off solid objects it is possible to pass through areas of **SHADOW** caused by tall buildings or hilly terrain which effectively blocks out the signal. As the vehicle passes in and out of shadow areas the level of signal will vary at a rapid rate, creating a flutter type of interference to the signal.
- **Distortion (multipath)** – Distortion may occur when the direct signal from the transmitter and a reflected signal reach the antenna at the same time and either cancel or aid each other, like ghosting on a TV. This results in intermittent distortion of the signal while moving or constant distortion when stationary such as at a traffic light or when parked.

  Should this distortion occur while stationary, moving the vehicle approximately 1 or 2 meters would on most occasions correct the problem. Circuitry has also been included in this radio to reduce this type of distortion.

PLAYING CDs

PLAYING A CD(S)

As each CD is inserted and loading, file check will appear on the display. Once playback begins, the track and track number will appear on the display.

If the ignition or radio is turned off with a CD in the player, it will stay in the player. When a CD is in the player and the ignition is turned on, the radio must be turned on before the current CD will start playback. When the ignition and radio are turned on, the CD will start playing where it stopped, if it was the last selected audio source.

If playing a CD-R, the sound quality may be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There may be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see Care of Your CDs for more information.

If there is no apparent damage, try a known good CD.

Do not add any label to a CD, it could get caught in the CD player. If a CD is recorded on a personal computer and a description label is needed, try labelling the top of the recorded CD with a marking pen instead.

Note

If you add any label to a CD, insert more than one CD into the slot at a time, or attempt to play scratched or damaged CDs, you could damage the CD player. When using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.

If an error appears on the display, refer to *CD messages* further on in this chapter.

CD OPERATION

CD playback mode selection

Press the **CD/AUX** button ❺ to play the disc when in another mode.

Disc load

Insert a CD into the CD slot with the CD label facing up. The audio system will change to CD mode and automatically begin playback.

CD eject

Press the **EJECT** button ❽ to eject the CD from the audio system.

Pause

Press the **CD/AUX** button ❺ to pause playback while a CD is playing. “PAUSE” will flash on the display screen.

Press the **CD/AUX** button ❺ again to resume CD playback.

If the audio system is connected to an aux unit, the pause function will not be enabled.

Next/previous track

Press the **TUNE** previous/next buttons ❻ or ❼ to play the previous or next track on the CD.

Next/previous folder

Press the **SEEK** up/down buttons ⓫ or ⓬ to select the previous or next folder on the CD.

Fast forward/fast reverse

Press and hold the **TUNE** previous/next buttons ❻ or ❼ to fast forward or fast reverse the current track playing on the CD.

Repeat (RPT)

Press the function button ❾ under “RPT” to playback the current track continuously. To cancel this function press the function button ❾ under “RPT” again.

Random (RDM)

Press the function button ❾ under “RDM” to playback the tracks randomly. To cancel this function press the function button ❾ under “RDM” again.

Scan (INT)

Press the function button ❾ under “INT” to playback the first few seconds of all the tracks sequentially. To cancel this function press the function button ❾ under “INT” again.

CD OPERATION cont.

USING AN MP3/WMA CD

MP3/WMA format

If you burn your own MP3/WMA disc on a personal computer:

- Make sure the MP3/WMA files are recorded on a CD-R disc.
- Do not mix standard audio and MP3/ WMA files on one disc.
- Make sure each MP3/WMA file has a .mp3 or .wma extension, other file extensions may not work.
- Files can be recorded with a variety of fixed or variable bit rates. Song title, artist name, and album will be available for display by the audio unit when recorded using ID3 tags version 1 and 2.
- Create a folder structure that makes it easy to find songs while driving. Organise songs by albums using one folder for each album. Each folder or album should contain 18 songs or less. Make sure to finalise the disc when burning an MP3/WMA disc, using multiple sessions. It is usually better to burn the disc all at once.
- The player will be able to read and play a maximum of 50 folders, 5 sessions, and 999 files. Long file names, folder names may use more disc memory space than necessary. To conserve space on the disc, minimise the length of the file, folder names. You can also play an MP3/WMA CD that was recorded using no file folders. The system can support up to 8 folders in depth, though, keep the depth of the folders to a minimum in order to keep down the complexity and confusion in trying to locate a particular folder during playback. If a CD contains more than the maximum of 50 folders, 5 sessions, and 999 files the player will let you access and navigate up to the maximum, but all items over the maximum will be ignored.

Root directory

The root directory will be treated as a folder. If the root directory has compressed audio files, the directory will be displayed as “ROOT”. All files contained directly under the root directory will be accessed prior to any other directory.

Empty directory or folder

If a root directory or a folder exists somewhere in the file structure that contains only folders/subfolders and no compressed files directly beneath them, the player will advance to the next folder in the file structure that contains compressed audio files and the empty folder will not be displayed or numbered.

CD OPERATION cont.

No folder

When the CD contains only compressed files, the files will be located under the root folder. The next and previous folder functions will have no function on a CD that was recorded without folders. When displaying the name of the folder the radio will display “ROOT”.

Order of play

Tracks will be played in the following order:

1. Playback will begin from the first track under the root directory.
2. When all tracks from the root directory have been played, playback will continue from files, according to their numerical listing.
3. After playing the last track from the last folder, the player will begin playing again at the first track of the first folder or root directory.

File system and naming

The song name in the ID3 tag will be displayed. If the song name is not present in the ID3 tag, the radio will display the file name without the extension (such as MP3/WMA) instead.

Track names longer than 32 characters or 4 pages will be shortened. The display will not show parts of words on the last page of text and the extension of the file name will not be displayed.

Playing an MP3/WMA

If the ignition or audio system is turned off with a CD in the player, it will stay in the player. When a CD is in the player and the ignition is turned on, the audio system must be turned on before the CD will start playback. When the ignition and audio system are turned on, the CD will start playing where it stopped, if it was the last selected audio source.

The CD player can play the smaller 3 inch (8cm) single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R, the sound quality may be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There may be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, refer to *Notes on compact discs* further on in this chapter.

If there is no apparent damage, try a known good CD.

Do not add any label to a CD as it could get caught in the CD player. If a CD is recorded on a personal computer and a description label is needed, try labelling the top of the recorded CD with a marking pen instead.

CD OPERATION cont.

All/directory mode

Repeat, intro-scan, random function operates in this folder when all modes are active.

1. Press the function button ❾ under “ALL”, then the “ALL” changes to “DIR”.
   To cancel “DIR” mode, press the function button ❾ under “DIR” again.

ID3 tag information display

1. Press the **INFO** button ❹. The radio displays the ID3 tag information of the current files.

CD messages

CHECK CD:

If this message appears on the display and/or the CD comes out, it could be for one of the following reasons:

- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. When the road becomes smoother, the CD should play.
- The CD is dirty, scratched, wet, or upside down.
- The air is very humid. If so, wait about an hour and try again.
- The format of the CD may not be compatible. See “MP3 Format” earlier in this section.
- There may have been a problem while burning the CD.
- The label may be caught in the CD player.

If the CD is not playing correctly, for any other reason, try a known good CD.

If any error occurs repeatedly or if an error cannot be corrected, contact your Holden Dealer. If the audio system displays an error message, write it down and provide it to your Holden Dealer when reporting the problem.

AUX mode

The audio system has one auxiliary input socket (diameter 3.5mm) located on the lower right side of the fascia.

This is not an audio output; do not plug the headphone set into the front auxiliary input socket.

You can however, connect an external audio device such as an iPod, laptop computer, MP3 player, CD changer, or XM™ receiver, etc. to the auxiliary input socket for use as another source for audio listening

AUX IN mode selection

Press **the CD/AUX** button ❺ in another playback mode.

If the auxiliary input socket doesn’t detect the presence of an output jack, the aux mode will not be activated.

WARNING
Do not set up or operate portable devices while the vehicle is being driven.

*6 CD OPERATION**

Note The six stacker CD player is operated in the same way as the single CD player except for the added features listed below.

Loading

This radio hold up to 6 discs.

1. Press the **LOAD** button ⑩ and the display will show the number of empty disc spaces.
2. Press the function button ⑨ under the disc number you want to insert.
3. Insert a CD into the CD slot with CD label up. The audio system will insert the CD into the slot automatically and begin play back.

To insert multiple CDs

1. Press and hold the **LOAD** button ⑩ for one second. You will hear a beep and a message to load multiple discs will be displayed.
2. Follow the displayed instruction on when to insert the discs.

The CD player can takes up to 6 discs.

Note

Press the **LOAD** button ⑩ again to cancel loading more CDs.

CD eject

1. Press the **EJECT** button ⑧. The display will show the number of discs inserted in the audio system.
2. Press the function button ⑨ under the number of the disc to be ejected from the tray.
3. Pull the disc out of the tray.
4. Press the **EJECT** button ⑧ for more than 1 second. The audio system will eject the discs in order.

Pause

1. Press the **CD/AUX** button ⑤ to pause playback while a CD is playing back.
   "PAUSE" will flash on the display.
2. Press the **CD/AUX** button ⑤ again to start playing the CD.

Note If the audio system is connected with an aux unit, the pause function will be disabled.

Next/previous CD

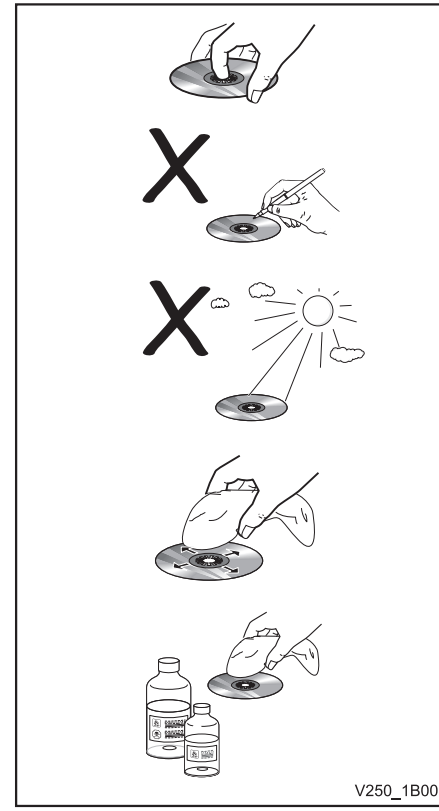
Press the function button ⑨ under "DISC+/ Disc" to change the disc. The audio system will play back the first track of the next/previous disc.

NOTES ON COMPACT DISCS

Care of your CD

- Handle the CD by its edge and avoid touching the playing surface.

  Directly after removal from the CD/MP3 slot, place the CD into the CD cover to prevent damage or soiling.
- Do not stick paper or tape or write on either surface.
- Do not expose the CD to direct sunlight or a heat source for example, a hot air duct.
- Dirt and liquids on CDs may soil the audio systems CD player lens resulting in malfunction.
- Before inserting a CD into the audio system, clean the CD with a cleaning cloth. Wipe the CD from the centre outwards, rather than in a circular motion. See illustrations.
- Do not use solvents such as petrol, thinners etc. Use commercially available CD cleaners.



ANTENNA

The antenna is incorporated in the rear window. The antenna is part of the heated rear window demister pattern. This type of antenna may be adversely affected by dirt on the inside of the window or damage to the antenna pattern.

Note

- Do not place any stickers over the antenna pattern.
- Care must be taken not to damage the antenna pattern when cleaning the inside of the rear window.

GLOSSARY OF TERMS

Balance
Shifting of volume to left or right loud speaker.

Bass
Low frequency sound.

CD text
Information stored on a audio CD title which include the following data:

- Track name.
- Artist's name.
- CD title.

Fader
Front/rear volume distribution.

MP3
CD audio data compression method developed by Fraunhofer Institute. Compression allows reduction of the amount of data to around 10% of the original volume without audible losses in sound quality (at a bit rate of 128 kbit/s). If lower bit rates are used to convert the CD audio data into MP3 then the files become even smaller but sound quality is reduced.

WMA
Windows Media Audio, a data compression method used to store audio data.

Random play
The tracks on a CD are played back in random order.

Treble
High frequency sound.

BLUETOOTH®

Bluetooth® mode

Press the ᛒ button ❸. The audio system will enter the pairing procedure.

Pairing procedure

1. Press the button below “PAIRING” in the display.
2. Search and select the device name “CAR AUDIO” for Bluetooth® on a phone.

The audio system will display the name of a connected device for 3 seconds.

The audio system will return to “Mode Selection” after the connection procedure and “BT” will be displayed.

Make a call

1. Press the button below “Call” in the display.
2. Press the button below “Last Call” in the display.

The audio system will display “Dialling...” and “Connected”.

Incoming call

The audio system will display “Incoming Call...” for 3 seconds, The audio system will display “Incoming call number” until the “ANSWER” button or “DECLINE” button is pressed.

1. Press the “ANSWER” button and the audio system will be on line.
2. Press the “DECLINE” button and the audio system will return to the last mode.

On the line

Press the button below “MIC MUTE” and the phone and microphone is muted.

Press the button below “PRIVATE” or the ⏻ power mute rotary button ❶ while using a phone, and the mode will change to “private mode”.

Press the button below “HANG UP” while using a phone and the audio system will return to the last mode.

A2DP mode

Press the button below “AUDIO PLAY” on the display.

You can play, pause or play next/previous tracks from the MP3 files on your phone.

Auto connection

The audio system will attempt to connect to the previous BT device automatically when the audio system is switched on.

The BT device which was connected to the audio system comes back into range within 10 metres from the vehicle. The audio system will attempt to connect to the BT device automatically.

The *Bluetooth*® word mark and logo are registered trademarks and are owned by the Bluetooth SIG, Inc.

CHAPTER 2

Locks

Page

Keys....2-2
Ignition switch....2-5
Door locks....2-6
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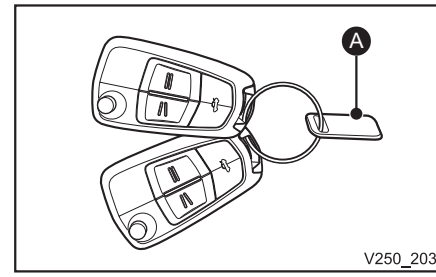
Bonnet lock....2-10
Security....2-11

*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

KEYS

KEY



This key operates all locks and the ignition. The following buttons appear on the key.

= Lock

= Unlock

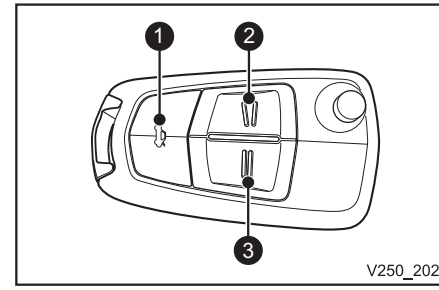
= Boot release

The code number for your keys is stamped on the key plate Ⓐ, which is attached to the key ring. Record the key number, remove the key plate and keep the number and the key plate in a safe place (not in the vehicle).

To protect your car from theft, an electronic immobilisation system has been installed in your vehicle. Only keys with the correct electronic code can be used to start the vehicle.

Note Even if a key has the same profile, it will not start the engine if the electronic code is incorrect.

In the event of the original keys being lost, any additional or replacement keys must be purchased from and programmed by your Holden Dealer using your key code number.



Lock: Press the button ❸ on the key to lock the doors and to arm the alarm system. The hazard lamps will flash once.

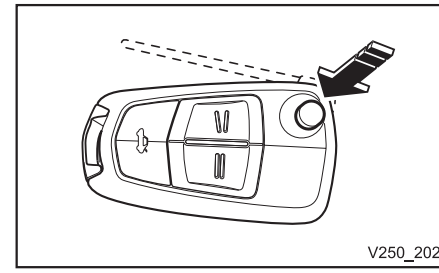
Unlock: Press the button ❷ on the key to unlock the doors and to disarm the alarm system. The hazard lamps will flash twice.

Refer to *Door locks* further on in this chapter.

Boot: Press and hold the button ❶ on the key to unlatch the boot lid.

Refer to *Boot lock* further on in this chapter.

Foldaway key blade



Press the button to extend the key blade.

To retract the key blade, press the button and fold the key section into the remote.

Note The key engages audibly.

KEYS cont.

Pressing buttons

Note When pressing the key buttons, ensure that other keys on the key ring are not between the key and the vehicle. Other keys can obscure the signal being transmitted to the vehicle. Refer to *Notes about the keys* further on in this chapter.

Matching transmitter(s) to your vehicle

Each remote keyless entry transmitter is coded to prevent another transmitter from unlocking your vehicle.

If a transmitter is lost, stolen or extras are required, a replacement can be purchased through your Holden Dealer. Remember to bring any additional transmitters so they can also be re-coded to match the new transmitter.

Once your Holden Dealer has coded the new transmitter, the lost transmitter will not unlock your vehicle.

Up to 4 keys can be matched to your vehicle at the same time.

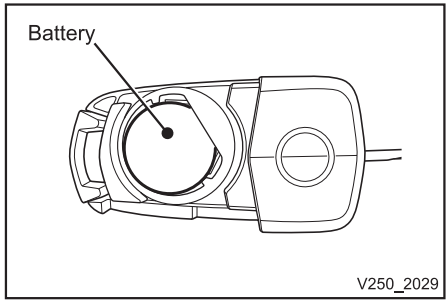
WARNING
The remote control unit contains precision electronic parts. To help avoid transmitter trouble:

- Do not leave the remote control unit in direct sunlight.
- Do not treat the remote control unit carelessly.
- Do not allow the remote control unit to get wet or ingress moisture.

Replacing the battery in the remote control

Replace the battery as soon as the range of the remote control becomes reduced.

1. Remove the back cover by hand.
2. Remove the battery and replace it with the new one, making sure the positive (+) side of the battery is facing up. Refer to *Specifications* in chapter 8 for the correct battery to be used.
3. Reassemble the transmitter ensuring the cover is engaged correctly.
4. Test the operation of the transmitter with your vehicle.



Note

- Avoid touching the flat surfaces of the battery with your bare fingers. Handling will shorten battery life.
- Avoid touching the circuit board and other components inside the remote control.

KEYS cont.

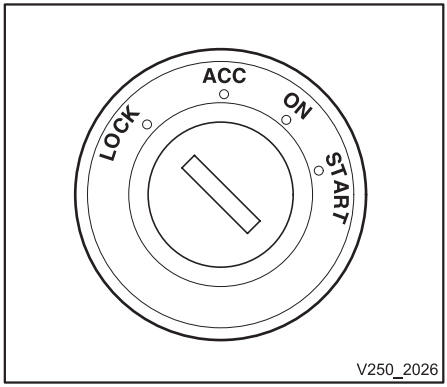
NOTES ABOUT THE KEYS

- When a button on the key is pressed, it sends a signal to the vehicle.
- The remote control in the key has a range of approximately 20 metres. The range is dependent on the charge state of the transmitter battery and on ambient conditions of the vehicle's location, the key's location and the area between them. If the key buttons do not work, change your position to the vehicle and try again. Normally, getting closer to the vehicle will solve the problem. Certain conditions also enable ranges of more than 20 metres. Take care that no button is pressed unintentionally, especially when the vehicle is out of sight.
- Tinting the vehicle windows reduces the range of the key if the tinting material has a metallic film.
- The key buttons may not work if the vehicle is parked near strong radio activity, such as under TV towers (most likely in high lookout car parks).
- At times you may notice a decrease in range. This is normal for any remote keyless entry system. If the transmitter does not work or if you have to stand closer to your vehicle, try this:
    - Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
    - Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
    - If you are still having trouble, contact your Holden Dealer.
- When, for any reason, pressing the key buttons does not work, the doors can be locked (anticlockwise) and unlocked (clockwise) by turning the key in the driver's door lock.
- If the vehicle is delivered with only one key, notify your Holden Dealer immediately.
- Always store spare keys in a safe, dry place.

IGNITION SWITCH

IGNITION POSITIONS

WARNING
- Do not switch the engine off while the vehicle is moving as there will not be any power assist for brakes or steering.
- Never remove the key while the vehicle is moving, as this will lock the steering.



LOCK

When the key is in the LOCK position, some electrical accessories and the engine are off.

The key is inserted and removed only from the LOCK position.

To help guard against theft, the vehicle's engine is automatically disabled shortly after turning the key to the LOCK position and removing the key from the ignition switch.

In addition, the steering wheel is automatically locked when the key is removed. To release the steering lock and enable the engine, re-insert the key and turn it towards the front of the vehicle.

If having trouble turning the key to unlock the steering, turn the steering wheel slightly to the right or left while turning the key towards the front of the vehicle.

ACC

When the key is in the ACC (accessories) position, the engine will not run. However accessories such as the audio system will still operate.

ON

When the key is in the ON position, the engine is ready to start (or is already started) and all electrical systems are active.

Note
- Diesel engine: The Glow plug indicator lamp will illuminate until the engine is sufficiently warmed for cold starting. Once the lamp extinguishes, the key can be turned to the **START** position and the engine started. Refer to *Engine starting* in chapter 4.
- The warning lamps, which are designed to illuminate at the ignition ON position, indicate the systems are working. Refer to *Warning/reminder indications* in chapter 1A.
- Do not leave the switch in the ON position for a prolonged period, unless the engine is running, otherwise the vehicle's battery will discharge.

START

This is the position for starting the engine. The key should be released from this position as soon as the engine starts. The key automatically returns to the ON position when released.

DOOR LOCKS

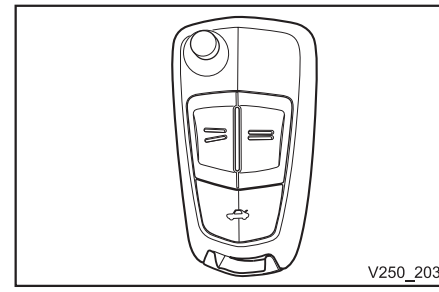
LOCKING

Doors are locked when the lock snib is flush with the door handle. If the snib is showing red, the door is unlocked. Refer to *Door lock snibs* further on in this chapter.

Remote locking

When the vehicle is unlocked, close all doors and then press the button on the key to lock all doors and arm the alarm system.

The vehicle hazard lamps will flash once and the doors will lock.

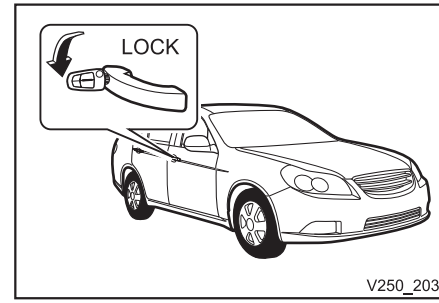


Manual locking

Insert the key in the driver's door lock and turn anticlockwise, then turn it back to the vertical position and remove.

Note

- This will lock all doors.
- Manual locking will not arm the alarm system.



Locking from the inside

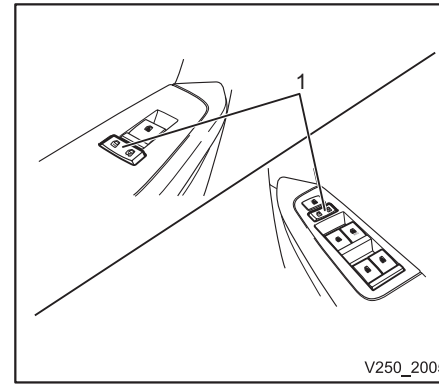
Press the door lock button located on either of the front doors to lock all the doors. This will not arm the alarm.

Push the driver's door lock snib flush with the door handle to lock all doors.

Push any passenger's door lock snib flush with the door handle to lock an individual door.

Note

- If any door is open when the driver's door lock snib is pushed, that door will not be locked.
- The door lock snibs cannot be pushed in when the doors are open. This prevents accidentally locking the key inside the vehicle.



DOOR LOCKS cont.

UNLOCKING

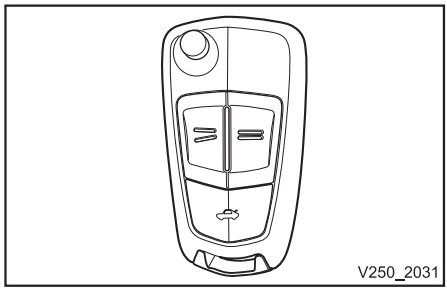
Doors are unlocked when the lock snib is showing red. If the snib is flush with the door handle, the door is locked. Refer to *Door lock snibs* further on in this chapter.

Remote unlocking

When the vehicle is locked, press the button on the key to unlock all doors and disarm the alarm system.

The vehicle hazard lamps will flash twice and the doors will unlock.

Note If you do not open a door or start the engine within 30 seconds, all doors will automatically re-lock and arm the alarm.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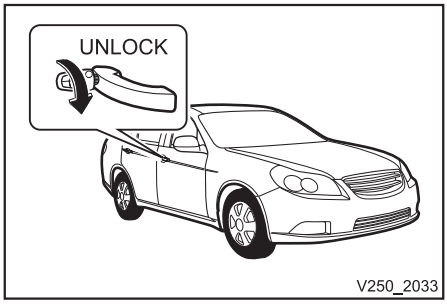
Manual unlocking

Insert the key into the driver's door lock and turn clockwise, then turn it back to the vertical position and remove.

Note This will unlock all doors and disarm the alarm system.



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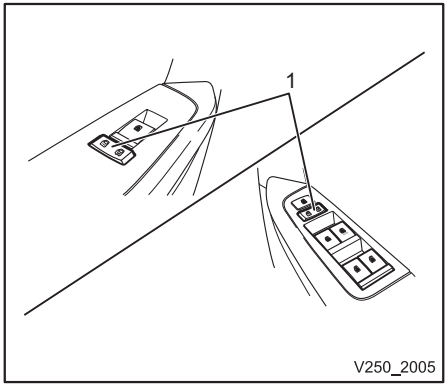
Unlocking from the inside

Press the door lock button located on either of the front doors to unlock all the doors.

Pull a door lock snib until the red tab is showing to unlock an individual door.

Note

- The door lock snibs cannot be pushed when the doors are open. This prevents accidentally locking the key inside the vehicle.
- If the vehicle was locked using the button on the key, then unlocked from the inside using a door lock snib, the alarm will sound.



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DOOR LOCKS cont.

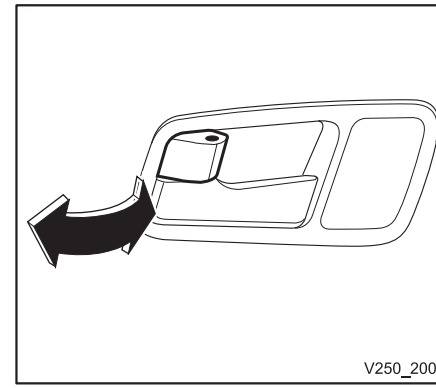
DOOR LOCK SNIBS

To lock any door from the inside, push the door lock snib flush with the door handle.

To unlock any door from the inside, pull the door lock snib.

Note

- The driver's door lock snib will lock and unlock all doors.
- The door lock snibs cannot be pushed when the doors are open. This prevents accidentally locking the key inside the vehicle.



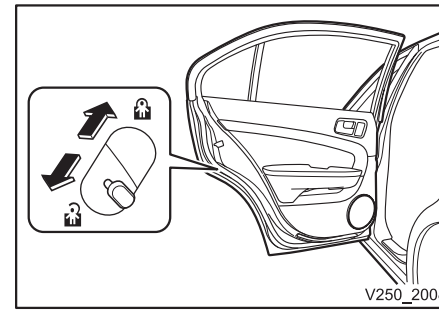
Child safety rear door locks

Child safety locking helps prevent the rear doors being accidentally opened by small children in the vehicle.

The locks are provided on the rear edge of both rear doors. They are accessible when the door is open.

To activate the child safety door locks:

1. Open the rear door you intend to lock.
2. Locate the child safety lock lever on the door edge.
3. Slide the lever up to the position to lock. To unlock slide the lever down to the position.



WARNING
For safety, always check that the lock is operating correctly (after setting) by trying to open the door from inside the vehicle.

To open a rear door when the child safety door lock is activated, unlock the door and open from the outside.

BOOT LOCK

UNLOCKING THE BOOT

Use one of the methods shown below to unlock/open the boot. After partially opening the boot lid, gas struts automatically take over to lift and hold the boot lid in the fully open position.

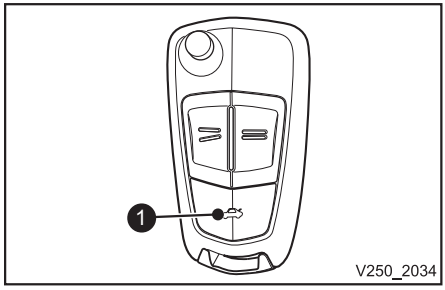
Note

- For safety reasons, unlock/open the boot only when the vehicle is stationary.
- The boot locks automatically when closed, be careful not to leave the keys in the boot, as they will be locked in.

Key button

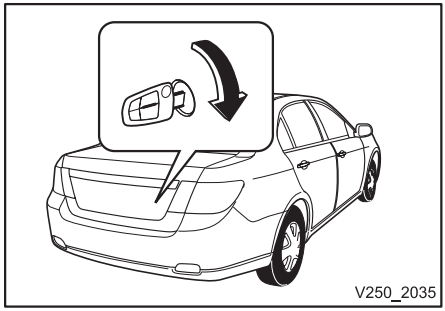
Press and hold the button ❶ on the key to unlock/open the boot.

When the boot is unlocked/opened, it can then be fully opened from outside.



Manual key release

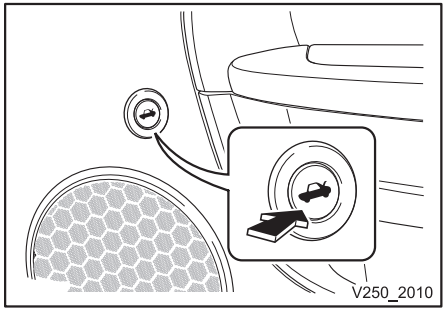
Insert the key and turn clockwise to unlock/open the boot.



Boot release button

The boot release button is located in the driver's door trim. Pressing this button will unlock/open the boot.

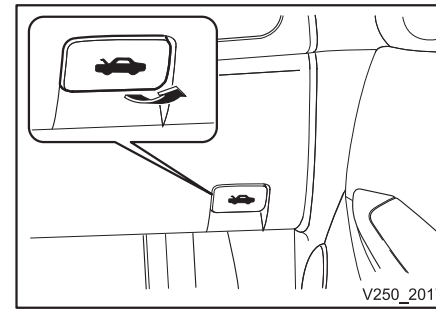
When the boot is unlocked/opened, it can then be fully opened from outside.



BONNET LOCK

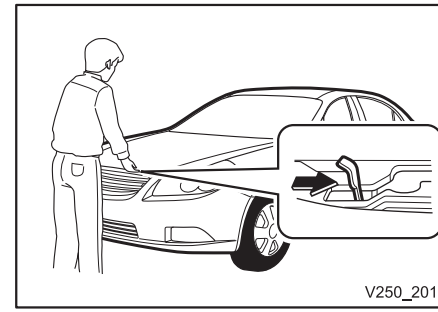
OPENING THE BONNET

From the driver's side of the vehicle, pull the lever towards you. This allows the bonnet to release but is prevented from opening by the safety catch.



To open the bonnet completely, reach under the front edge of the bonnet and push the bonnet release lever to the passenger's side of the vehicle. Hold in this position and raise the bonnet.

After you have partially lifted the bonnet, gas struts automatically take over to lift and hold the bonnet in the fully open position.



CLOSING THE BONNET

WARNING
To avoid injury and/or damage to the vehicle, check each time, before the bonnet is closed, that the contact area is unobstructed.

Lower the bonnet until the gas struts stop providing lifting effort and then allow it to drop. Make sure the latch engages.

WARNING
If while driving you notice that the bonnet has not been properly closed, pull the vehicle over to the side of the road at the earliest possible moment and close the bonnet correctly.

SECURITY

ALARM

Arming and disarming

When the button on the key is pressed:

- the alarm is armed automatically,
- all doors lock and
- the hazard warning lamps flash once.

The security indicator light also starts flashing. It flashes approximately once every second, indicating the system is now activated.

The alarm system is disarmed automatically when the vehicle is unlocked using the button on the key.

Note

- If any door is unlocked without pressing the button on the key while the alarm system is armed, opening any door will activate the alarm.
- If the key is inserted into the ignition switch, the transmitter will not operate the alarm.
- The system can be activated even if the windows are open. Close all the windows and doors before leaving the vehicle.
- The transmitter must be used to activate the alarm.

WARNING

- Do not use the transmitter to lock the vehicle if anyone is to be left inside the vehicle.
- Never leave children or pets unattended in your vehicle. The temperature inside the vehicle can increase rapidly and reach much higher levels than the temperature outside. This can result in serious injury or death.

Break-in

The system provides a visual and an audible alarm when any of the doors, boot or the bonnet are opened without using the key or pressing the button on the key.

To stop the alarm sound:

- press the button on the key or
- unlock the driver's door with the key.

Otherwise, after 30 seconds, the alarm will automatically stop and the system will lock the doors and reset the alarm.

If the system does not operate as described above, have it checked by your Holden Dealer.

SECURITY cont.

Immobiliser

This vehicle is fitted with an immobiliser. It prevents unauthorised engine starting.

The ignition key will be recognised by the vehicle when the key is inserted into the ignition switch allowing the engine to be started.

Note

- Avoid large bundles of keys being attached to the ignition key.
- Avoid having keys from other vehicles attached to the ignition key.
- Replacement keys can only be programmed by your Holden Dealer.
- If the vehicle's key is lost, inform your Holden Dealer immediately so the car can be reprogrammed to no longer recognise the lost key as valid.
- A maximum of 4 keys can be programmed to suit one vehicle.
- Do not attempt to start the vehicle with a non-approved key.

CHAPTER 3

Know your vehicle

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*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

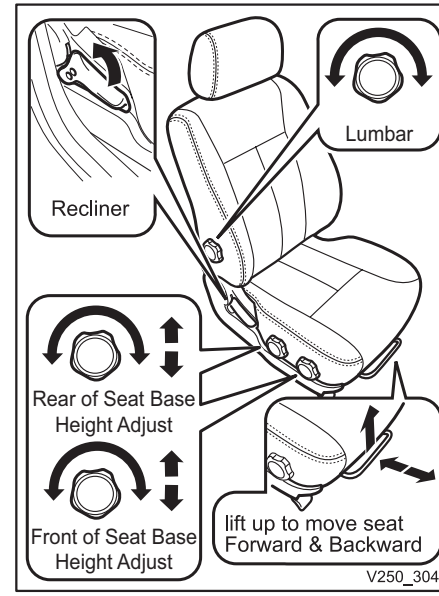
SEATS

FRONT SEATS

WARNING – SIDE IMPACT AIRBAGS (SIAB)
Do not fit unauthorised seat covers as they may impair the deployment of the SIAB. Do not position your body or any object (including pillows) between front seats and doors. Front seat occupants should not lean on or sleep against the door. Always sit centrally in the seat. Always wear a seatbelt. Refer to *Airbags* further on in this chapter.

WARNING
Do not adjust the driver's seat when the vehicle is moving as the seat could move suddenly causing the driver to lose control.

Seat adjustment



To adjust the height and tilt:

- Turn the front wheel to raise or lower the front of the seat.
- Turn the rear wheel to raise or lower the rear of the seat.

To move the seat forwards/backwards:

- Lift up the bar at the front of the seat, to disengage the latch,
- Slide the seat forwards or backwards.
- Release the bar, to re-engage the latch.

Note Try to move the seat back and forth to check that the latch is fully engaged.

To adjust the lumbar* support:

- Turn the upper hand wheel (on the door side of the seat).

This alters the support given to the lower part of your back.

To recline the seat back:

- Lift the lever on the door side of the seat. The seat back can now be moved forwards or backwards.
- Release the lever, to re-engage the latch.

Note Try to move the seat back forward and backwards to check that the latch is fully engaged.

WARNING
To avoid reducing the effectiveness of seatbelts, seat backs should only be upright or at most semi-reclined when the vehicle is moving.

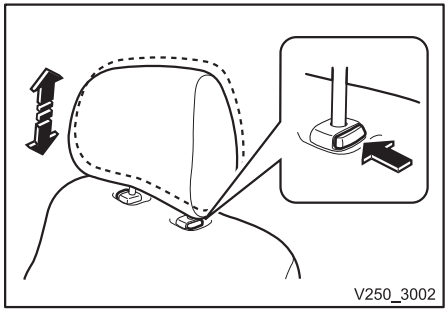
SEATS cont.

Front head restraint

WARNING
- This safety feature is not intended as a headrest. It is solely for the reduction of whiplash neck movement in an accident involving your vehicle.
- The centre of the head restraint should be at eye level, never at neck level.

To raise the height of the head restraint, lift the head restraint upwards.

To lower the height of the head restraint, push in the locking button at the base of the head restraint pole and push the head restraint downwards.

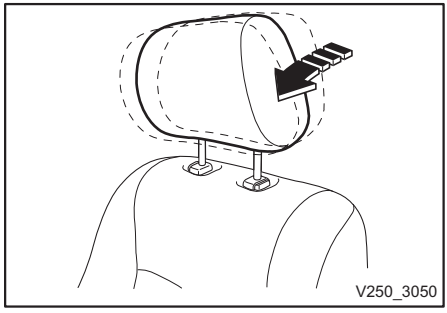

V250_3002

Front seat head restraints may also be tilted.

To tilt a head restraint all the way back, pull the top of the head restraint all the way forward, then release it.

To adjust the tilt, pull the head restraint forward to one of 3 positions.

Note To remove a head restraint, push in the locking button and pull it upward until it slides out of the guide sleeves.


V250_3050

WARNING
Make sure that the head restraint has been put back into place and readjusted before driving.

SEATS cont.

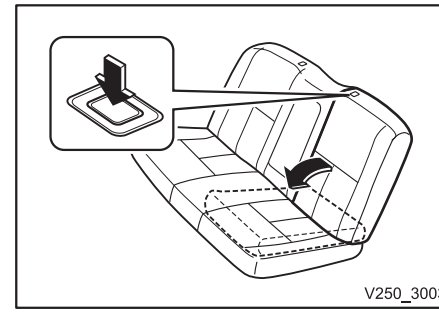
REAR SEAT

Folding rear seat back

The rear seat may be folded forwards in two separate sections (60/40) to gain access to the boot area or for carrying long loads.

To fold a section forward, press the corresponding release lock button (located at the top of the rear seat back) all the way down and fold the section forward.

To return to the upright position, make sure the seatbelt is free. Push back into place and ensure that the lock button is fully engaged.

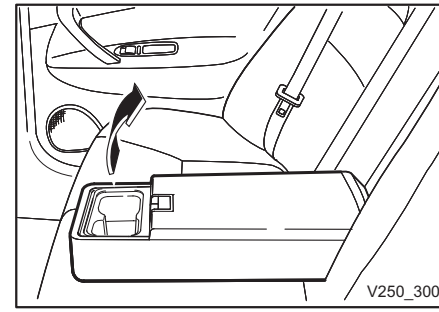


WARNING

- Ensure that the rear seat backs are in the locked position before operating the vehicle with passengers in the back seat.
- Do not allow passengers to sit on the folded seat backs while the vehicle is in motion.
- Do not press the release lock button on the top of the seat back while the vehicle is moving.

Rear armrest

An armrest is provided in the centre section. To fold down the armrest, pull down on the front strap. Push the armrest up when it is no longer required.



SEATS cont.

Rear head restraints

WARNING

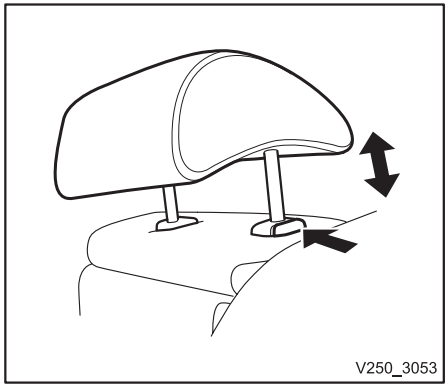
- This safety feature is not intended as a headrest. It is solely for the reduction of whiplash neck movement in an accident involving your vehicle.
- The centre of the head restraint should be at eye level, never at neck level.

To raise the height of the head restraint, push the locking button in and lift the head restraint upwards.

To lower the height of the head restraint, push in the locking button at the base of the head restraint pole and push the head restraint downwards.

Note

- Rear outer head restraints have two height adjustment settings, while the centre head restraint* has one.
- To remove a head restraint, push in the locking button and pull it upward until it slides out of the guide sleeves.



RESTRAINTS

SEATBELTS

WARNING

- Seatbelts are designed to bear upon the bony structure of the body, and should be worn low across the front of the pelvis or the pelvis, chest and shoulders, as applicable; wearing the lap section of the belt across the abdominal area must be avoided.
- Seatbelts should be adjusted as firmly as possible, consistent with comfort, to provide the protection for which they have been designed. A slack belt will greatly reduce the protection afforded to the wearer.
- Care should be taken to avoid contamination of the webbing with polishes, oils and chemicals, and particularly battery acid. Cleaning may safely be carried out using mild soap and water. The belt should be replaced if webbing becomes frayed, contaminated or damaged.
- It is essential to replace the entire assembly after it has been worn in a severe impact even if damage to the assembly is not obvious.
- Belts should not be worn with straps twisted.
- Each belt assembly must only be used by one occupant; it is dangerous to put a belt around a child being carried on the occupant's lap.
- No modifications or additions should be made by the user which will either prevent the seatbelt adjusting devices from operating to remove slack, or prevent the seatbelt assembly from being adjusted to remove slack.

Pregnant women

Seatbelts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they do not wear a seatbelt. A pregnant woman should wear a lap/sash belt with the lap portion of the belt worn as low as possible below the rounding of their stomach, throughout the pregnancy.

RESTRAINTS cont.

Lap/sash belts

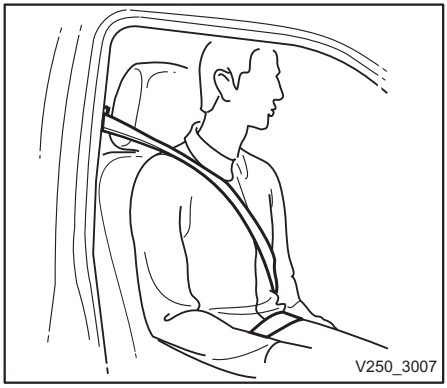
To fasten the seatbelt:

- Pull the metal tongue across your body and clip it into the buckle.
- When the metal tongue is locked safely into place you will hear a 'click'.
- Give a gentle pull on the buckle to ensure full engagement.
- After fastening, settle the belt at the hip, and run your hand under the sash from hip to shoulder to ensure that the belt fits comfortably and is free from twists. Any extra belt length retracts automatically.
- Ensure the lap section of the belt is also free from twists and fits firmly across your hips.

Note For your safety, wear the lap section of the seatbelt as low as possible on your hips, not on your waist or abdomen.

The 'emergency-locking retractor belt' allows you to move while the vehicle is travelling normally, but locks immediately on fast braking, impact with a solid object or any quick movement by the wearer.

To undo the belt, press the release button on the buckle and allow the belt to retract. Check that it fully retracts without twisting or turning.

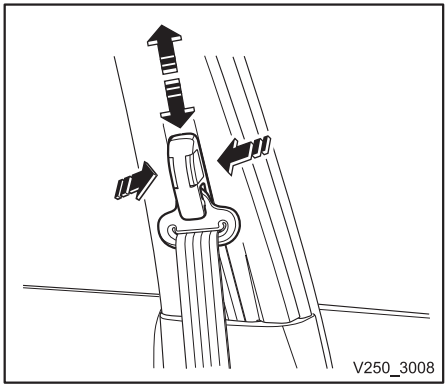


Shoulder height adjust

The seatbelt is anchored to the vehicle near your shoulder. The position of the seatbelt anchor can be adjusted to accommodate the height of the wearer.

Shorter people should select a low anchor position; taller people a higher one. This ensures, for both safety and comfort, that the webbing of the seatbelt fits on the shoulder.

- Press and hold the lock buttons on the adjuster down, then move it up or down as required.
- Release the adjuster and ensure that the anchor clicks into position.



WARNING

- For your safety, do not adjust the driver's side shoulder belt anchor while the vehicle is in motion.

RESTRAINTS cont.

CHILD RESTRAINTS

WARNING – EXTREME HAZARD

- Do not use a rearward facing child restraint on a seat protected by an airbag in front of it.

  The child could be seriously injured if the airbag inflates, as the child's head would be very close to the inflating airbag.
- Remember that it is safest for children to be seated in the rear seats.

WARNING AVERTISSEMENT ADVERTENCIA
AIR BAG
DO NOT place rear-facing child seat on this seat with airbag
DEATH OR SERIOUS INJURY can occur.
Ne pas placer de siège enfant "dos à la route"sur le siège passager avant équipé d'un airbag.
Risque sérieux de MORT OU DE BLESSURES GRAVES.
NO DEBE colocar de espaldas asientos para bebes en esta silla equipada con bolsa de aire
MUERTE O TRAUMA SERIO pueden ocurrir.
V250_3009

WARNING

- Always ensure that the seatbelt fits firmly around the child restraint.
- If a child cannot see out of the window, do not raise him/her by means of an ordinary cushion. It will not stay in place in a collision and the child can slip out of the straps and become entangled.

When travelling in a vehicle, children must be restrained in an appropriate child restraint at all times. The following are guidelines about selecting the appropriate restraint for your child.

Note When installing child restraints in vehicles equipped with head restraints refer to the illustration further on in this chapter.

WARNING

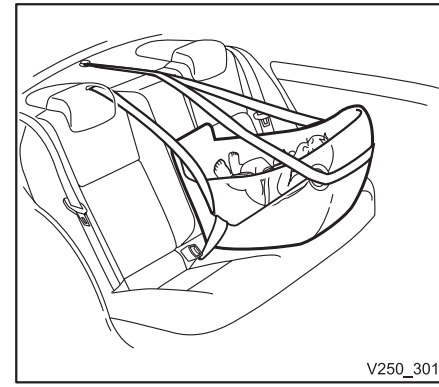
Always follow the child restraint manufacturer's fitting instructions when installing a child restraint into the vehicle.

Infants

Rearward facing infant capsules are designed so that in the event of a collision, impact forces will be evenly spread over the baby's back, with minimal jarring to the vulnerable head and neck area.

Recommended weight and height for rearward facing infant capsule	
Weight	Height
Up to 9 kg*	Up to 70 cm*

*AS/NZS 1754:2004



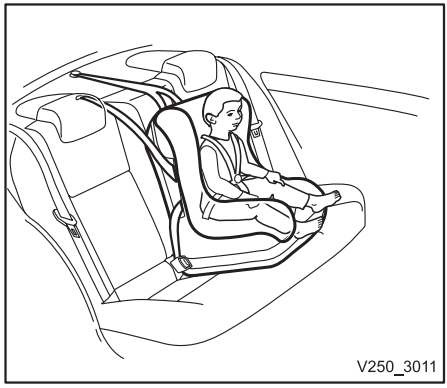
RESTRAINTS cont.

Young children

Forward facing child seats are for use when the child is able to sit and easily hold his or her head upright. It is also possible to purchase convertible seats which can be used as a rearward facing child restraint or converted to a forward facing child seat.

Recommended weight for forward facing child seat
Weight
8 to 18 kg*

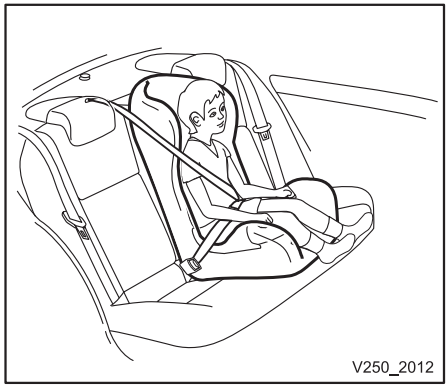
*AS/NZS 1754:2004


V250_3011

Booster seats are for when children outgrow a typical forward-facing child seat but they are still too small for lap/sash seatbelts. A booster seat raises the child so that the knees bend comfortably, the lap/sash seatbelt is correctly positioned and the child can see out the window. A rigid booster seat with a back, side wings and sash guide gives the best protection.

Recommended weight for booster seat with lap/sash seatbelt
Weight
14 to 26 kg*

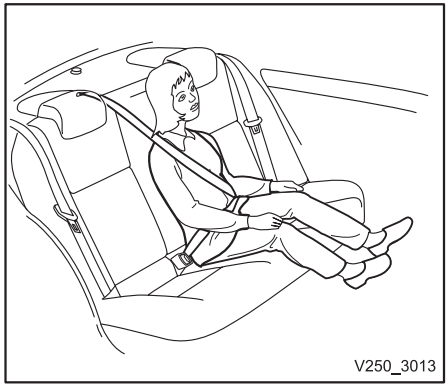
*AS/NZS 1754:2004


V250_2012

Older children

A child should use a normal lap/sash seatbelt only when:

- he/she can sit against the back of the rear seat with knees bent comfortably at the edge of the seat,
- lap belt rests low and snug across the hips – not across the stomach,
- sash belt is centred on shoulder and chest,
- he/she is able to stay seated like this for the entire trip.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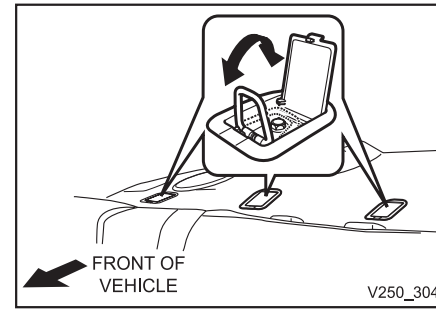
RESTRAINTS cont.

Anchorage points

WARNING

- Child restraint anchorages are designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstances are they to be used for adult seatbelts, harnesses, or for attaching other items or equipment to the vehicle.
- Only child restraints that have clips to attach to the vehicle's anchorage fitting (as shown in the following illustrations) are to be used. Earlier types of child restraints may not attach securely to this type of anchor.
- Use only Standards Australia approved child restraints and harnesses. Only purchase a child restraint which carries the appropriate Standards Australia sticker of approval.
- Where legally allowable, you may install a forward-facing child restraint in the front seat, but always move the passenger's seat as far back as it will go. The forward facing child restraint must still be attached to the left hand child restraint anchorage point, located behind the rear seat.
- Remember, it is safest for children to be seated in the rear seat.

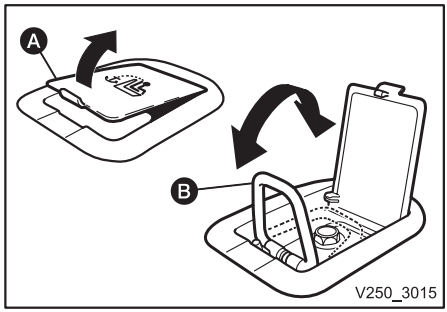
The vehicle is fitted with 3 anchorage points for child restraints. Located behind the rear seat on the parcel shelf.



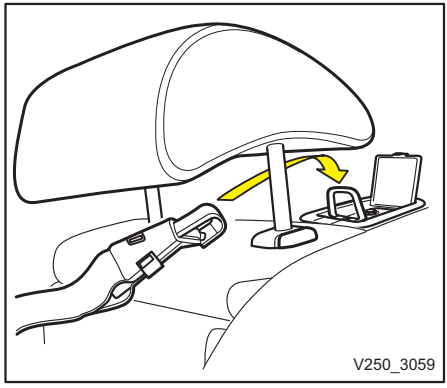
RESTRAINTS cont.

To attach top strap of child restraint:

1. Open up the lid of anchor point (**A**).
2. Pull bracket (**B**) of the anchor towards the front of the vehicle.
3. Raise the head restraint in the position where the child restraint is to be used.



4. Thread the tether strap of the child restraint under the head restraint* and between the poles.
5. Attach the tether strap to the anchorage point.



SUPPLEMENTAL RESTRAINT SYSTEM

AIRBAGS

When airbags inflate, an operating noise may be heard and a small amount of smoke-like gas is released. The gas is harmless and does not indicate malfunction or fire. The airbag then deflates, with the whole process taking only a moment.

WARNING

- Airbags are part of the 'Supplemental Restraint System (**SRS**)' as they assist, but do not replace seatbelts. Airbags do not deploy in every accident. Various factors dictate whether they deploy including speed, angle of collision and object hit. Airbags are not designed to inflate if the vehicle is hit from the rear or is involved in a rollover. Seatbelts must be worn by all passengers whenever the vehicle is moving.
- Airbags inflate with great force. If you are too close to an inflating airbag it may cause injury. Seatbelts help keep you in position for airbag inflation in the event of a collision.

An **SRS** warning lamp on the instrument panel flashes when the ignition is switched to the **ON** position. This is to indicate that the airbags are operational. If the lamp does not illuminate when the ignition is switched on, or if it illuminates when driving, contact your Holden Dealer immediately, as the airbags and seatbelt pretensioners may not function correctly in the event of an accident.

The system should also be inspected by a Holden Dealer if the dashboard area or steering wheel is scratched, cracked or damaged, or, if Side Impact Airbags (SIAB) are fitted, the front seats and upholstery are damaged. If curtain airbags are fitted the system should be inspected by a Holden Dealer if the headliner or trim panels are damaged.

Extensive design and testing has gone into the Holden airbag system. However, it should be treated with respect. Any interference with the system could lead to its failure or to accidental inflation.

Any work to the electrical system, steering column, dashboard area, steering wheel, front seats, headliner and interior trim panels (if curtain airbags are fitted) or airbag system should only be carried out by an authorised Holden Dealer.

Note Fitment of roo or nudge bars is not recommended as it may affect crash performance, airbag performance and engine cooling.

SUPPLEMENTAL RESTRAINT SYSTEM cont.

Airbags and child restraints

WARNING – EXTREME HAZARD

- Do not use a rearward facing child restraint on a seat protected by an airbag in front of it.

  The child could be seriously injured if the airbag inflates, as the child's head would be very close to the inflating airbag.
- Remember that it is safest for children to be seated in the rear seats.

Refer to *Child restraints* previously in this chapter.

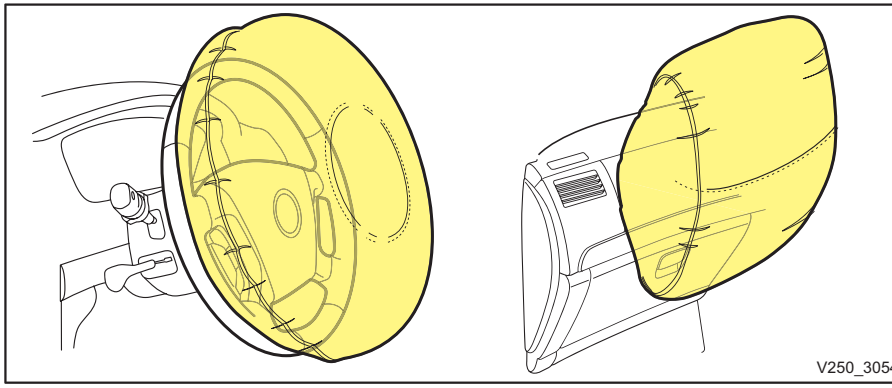
WARNING AVERTISSEMENT ADVERTENCIA
AIR BAG
DO NOT place rear-facing child seat on this seat with airbag
DEATH OR SERIOUS INJURY can occur.
Ne pas placer de siège enfant "dos à la route"sur le siège passager avant équipé d'un airbag.
Risque sérieux de MORT OU DE BLESSURES GRAVES.
NO DEBE colocar de espaldas asientos para bebes en esta silla equipada con bolsa de aire
MUERTE O TRAUMA SERIO pueden ocurrir.
V250_3009

SUPPLEMENTAL RESTRAINT SYSTEM cont.

Front airbags

The driver's airbag is stored inside the steering wheel. **AIRBAG** is stamped on the steering wheel and a label is attached on both sides of the passenger side sun visor.

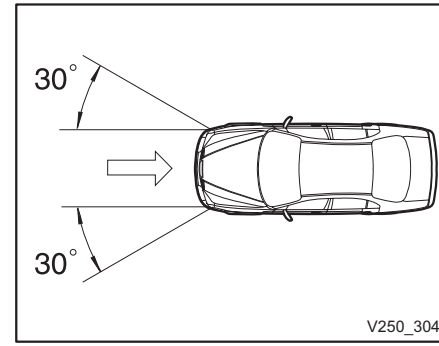
WARNING
- The horn pad must not be covered with adhesive or any other material.
- The driver should adjust the seat as far rearward as possible while still maintaining control of the vehicle.



The front passenger's airbag is stored in the dash panel. The wording **AIRBAG** above the glovebox and a label attached on both sides of the passenger sun visor indicates that a passenger airbag is fitted.

WARNING
- Do not place any objects on or over the dashboard or between an airbag and yourself.
- Do not hang anything from the sun visor or mirror.
- Passengers must not rest their feet on the dashboard.

Front airbags will inflate in certain severe frontal or near frontal impacts. Front airbags are not designed to inflate if the vehicle is struck from the side, rear or in rollovers. Always wear a seatbelt.



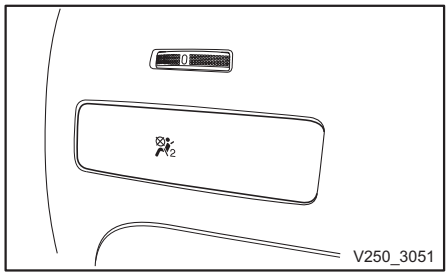
SUPPLEMENTAL RESTRAINT SYSTEM cont.

Passenger sensing system

The vehicle is equipped with a passenger sensing system for the front passenger seat. The warning lamp illuminates for 6 seconds when the ignition is switched on to check the lamp is working.

The warning lamp illuminates if the passenger seat is unoccupied. It indicates that the passenger front and side airbags are disabled.

Note The driver's front and side airbag are not part of the passenger sensing system.



WARNING
- Do not place any objects on or over the dashboard or between an airbag and yourself.
- Do not hang anything from the sun visor or mirror.
- Passengers must not rest their feet on the dashboard.

WARNING – EXTREME HAZARD
- Do not use a rearward facing child restraint on a seat protected by an airbag in front of it.

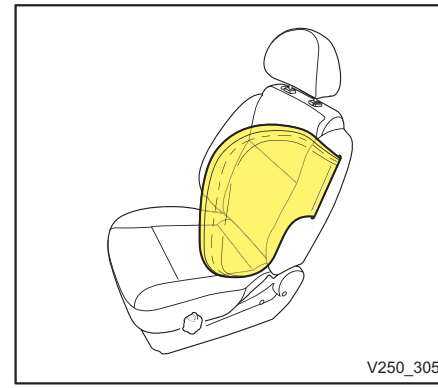
  The child could be seriously injured if the airbag inflates, as the child's head would be very close to the inflating airbag.
- Remember that it is safest for children to be seated in the rear seats.

SUPPLEMENTAL RESTRAINT SYSTEM cont.

Side Impact Airbags (SIAB)

Side Impact Airbags (SIAB) for the driver and front passenger are stored in the side of the seat backs closest to the door. If the vehicle is fitted with SIAB, there will be labels on the outer side of both front seats.

A SIAB only deploys on the side of the vehicle that is struck.



Note

- A Side Impact Airbag (SIAB) will deploy and offer protection in most, but not all, severe side impacts. Because of the limited time available to detect some side impacts, it is not possible to deploy the SIAB in all serious accidents (for example, some pole impacts).
- A Side Impact Airbag (SIAB) will deploy in certain severe side impacts. SIAB are not designed to inflate if the vehicle is struck from the front, rear, or in rollovers. Always wear your seatbelt.

WARNING

- Do not fit unauthorised seat covers as they may impair the deployment of the Side Impact Airbags (SIAB).
- Do not position your body or any object (including pillows) between front seats and doors.
- Do not lean on, or sleep against, the door. Always sit centrally in the seat.
- Always wear your seatbelt.

SUPPLEMENTAL RESTRAINT SYSTEM cont.

Curtain airbags

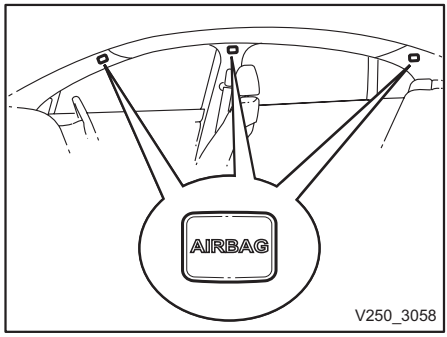
The vehicle is fitted with curtain airbags. There will be labels on the vehicle in the positions shown.

Curtain airbags are stored in the roof area, just above the front and rear doors. The curtain airbag only deploys on the side of the vehicle that is struck.

Curtain airbags will deploy in certain severe side impacts to the passenger area.

Note

- A curtain airbag will deploy and offer protection in most, but not all, severe side impacts. Because of the limited time available to detect some side impacts, it is not possible to deploy a curtain airbag in all serious accidents (for example, some pole impacts).
- A curtain airbag will inflate in certain severe side impacts. Curtain airbags are not designed to inflate if the vehicle is struck from the front, rear or in rollovers. Always wear a seatbelt.



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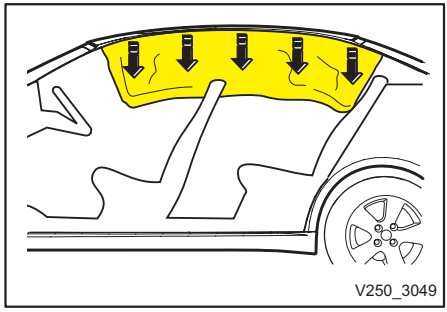
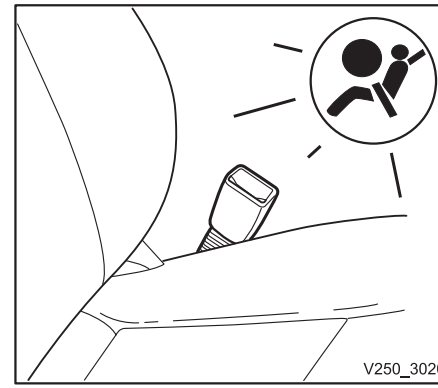

V250_3049

WARNING

- Do not position your body or any object (including pillows) in the area in which the airbag inflates.
- There must be no objects in the area in which the airbag inflates. Refer to the illustration.
- Use the hooks above the doors only to hang up light articles of clothing.
- Do not place any objects in the pockets of the hanging items.
- Do not hold onto the assist grips (above the doors) while seated in the vehicle.
- Always wear your seatbelt.
- Do not lean on, or sleep against the front or rear doors. Always sit centrally in the seat.

SUPPLEMENTAL RESTRAINT SYSTEM cont.

SEATBELT PRETENSIONERS



The front seatbelt system incorporates seatbelt pretensioners. They are part of the Supplemental Restraint System (**SRS**). In certain severe frontal, side or rear collisions, the belt buckles are pulled downwards, instantly tightening both the sash and the lap sections of the seatbelt.

An **SRS** warning lamp on the instrument panel flashes when the ignition is switched to the **ON** position. This is to indicate that the airbags are operational. If the lamp does not illuminate when the ignition is switched on, or if it illuminates when driving, contact your Holden Dealer immediately, as the airbags and seatbelt pretensioners may not function correctly in the event of an accident. Refer to *Warning/reminder indications* in chapter 1.

If the seatbelt pretensioners have been activated, the airbag warning lamp on the instrument panel will stay illuminated when the ignition is switched on. This is designed to remind you that the pretension system has been used and therefore needs to be replaced by your Holden Dealer. The seatbelts will remain operational.

POWER WINDOWS

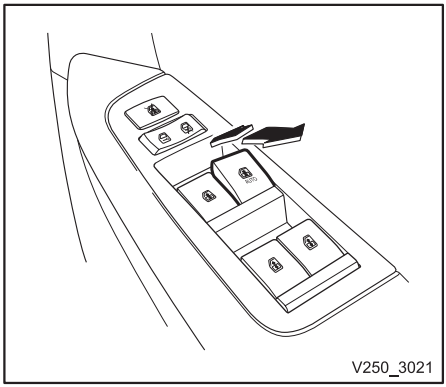
OPERATING THE POWER WINDOWS

The power window switches are located on the driver's door, while individual switches are located on all other doors.

The switches are operational when the ignition is switched on.

- To lower a window, press down and hold the respective button.
- To raise a window, pull up and hold the respective button.

  The window stops moving up as soon as the button is released.



Auto down – driver's windows only

To open the window fully, press and hold the switch down for at least half a second and then release. Press down again or pull up the switch to interrupt the automatic operation.

Rock the switch to open the window in short steps.

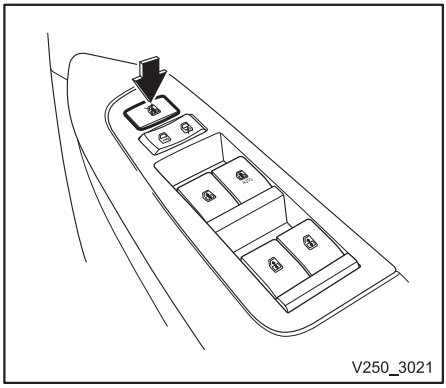
Time delay

After switching the ignition to **LOCK**, the power windows can be operated for 30 seconds, provided no door is opened.

Child safety switches

Press the child safety switch down to deactivate the rear door and passenger door switches. The rear and passenger windows now only operate from the driver's door switches.

Press the switch again to reactivate the rear door and passenger switches.

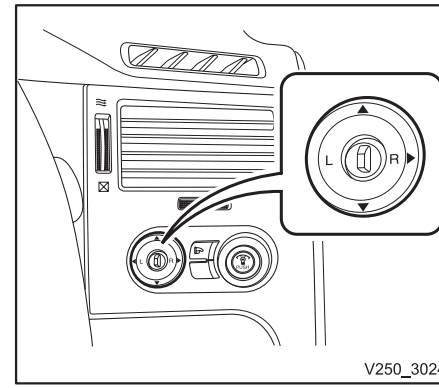


MIRRORS

EXTERNAL REAR VIEW MIRROR

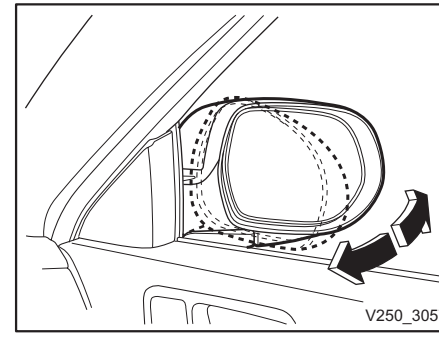
To adjust the external rear view mirrors, switch the ignition on and use the switch located on the driver's side of the instrument panel as follows:

- Move the centre toggle switch to the right to operate the right hand side mirror.
- Move the centre toggle switch to the left to operate the left hand side mirror.
- Press an arrow direction on the circular pad switch to adjust the mirror to the direction the arrow is pointing to (i.e. up, down, left or right).
- Move the centre toggle switch back to its centre position. This deactivates the switch and prevents unintentional adjustment of the mirrors.



The external mirrors are able to be folded back flush with the vehicle. Gently push the mirror in towards the vehicle until they are flush with the side of the door.

WARNING
The external mirrors are convex shaped, to provide a wider view. Objects in this mirror are closer than they appear.



MIRRORS cont.

INTERNAL MIRRORS

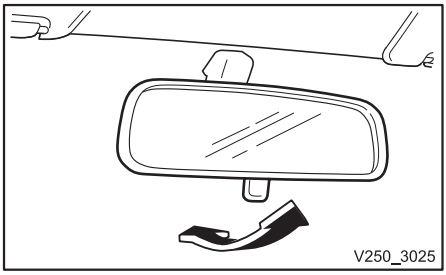
Internal rear view mirror

Push the lever on the lower edge of the mirror forwards (away from you) and then adjust the position of the mirror.

To reduce headlamp glare from following vehicles, pull the lever backwards (towards you).

Note The rear view clarity is reduced when the mirror is set to the anti-glare position.

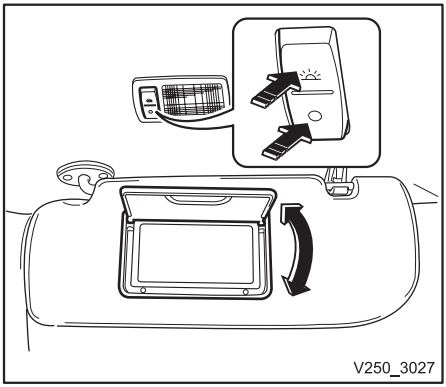
Return the lever back to it's original position as soon as the glare has disappeared to restore the rear view.



Vanity mirror with lamp*

To view the mirror, pull the cover up from the lower edge.

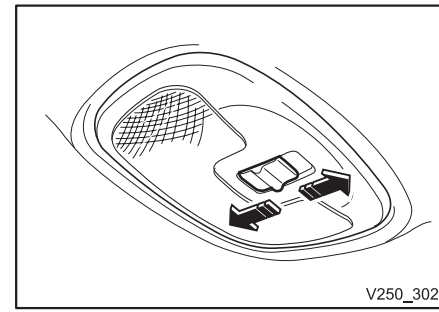
- To turn the lamp on press the ☼.
- To turn the lamp off, press the O button.



INTERIOR LAMPS

OPERATING THE INTERIOR LAMPS

Interior (dome) lamp



The interior dome lamp has 3 settings that can be used:

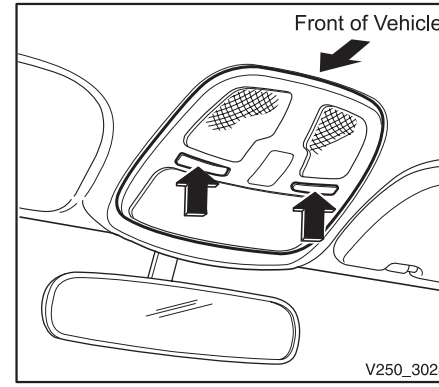
- **ON**

  Slide the switch towards the rear of the vehicle to turn the lamp on.
- **OFF**

  Slide the switch towards the front of the vehicle to turn the lamp off.
- **O** = door activated

  Slide the switch to the centre setting to turn the lamp on when a door is opened.

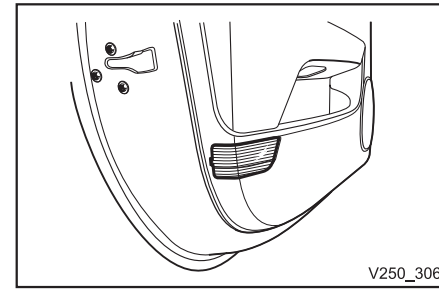
Front reading lamps



Front reading lamps are incorporated into the front roof console.

Press the corresponding button once to switch the lamp on or off.

Door step lamps



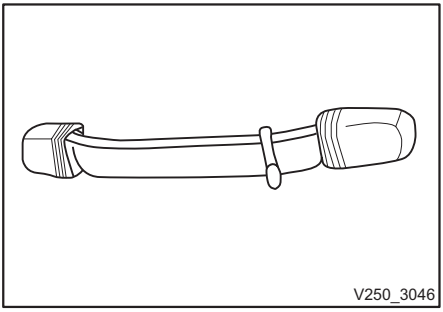
The front door step lamp illuminates when the front door is opened. The lamp will stay illuminated if the door is left open.

When the front door is closed the lamp will stay illuminated for approximately 7 seconds, then switches off.

ASSIST GRIPS

ASSIST GRIPS LOCATION

Assist grips are provided above the passenger doors. The rear assist grips also have coat hooks.



WARNING

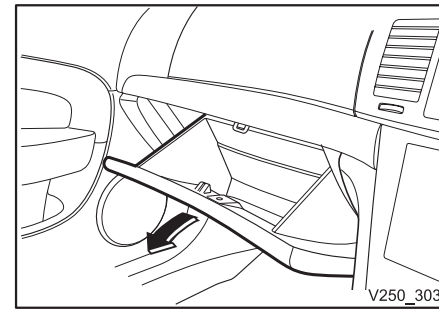
- Do not hold onto assist grips while seated in the vehicle.
- Use the hooks above the doors only to hang up light articles of clothing.
- Do not place any objects in the pockets of hanging items.

STORAGE COMPARTMENTS

GLOVEBOX

The glovebox is located in the dashboard directly in front of the passenger seat.

- To open the glovebox, pull the handle towards you.
- To close, push the lid firmly back into place.

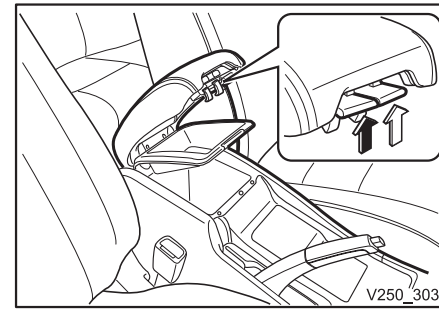


CENTRE CONSOLE

A storage area is provided under the front armrest. It consists of a storage bin and a storage tray.

- To open the storage bin, lift the right hand side latch on the underside of the front lip and lift the lid to a near vertical position.
- To open the storage tray, lift the left hand side latch on the underside of the front lip and lift the lid to a near vertical position.

Note Do not force the console lid further backwards.

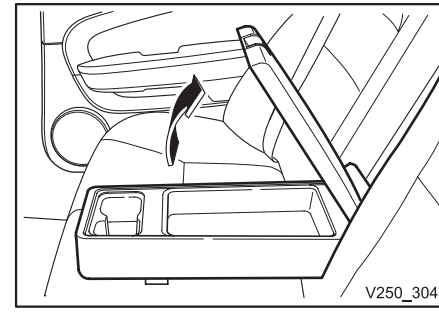


REAR ARMREST COMPARTMENT*

The rear armrest has a built-in storage compartment. When the armrest is down, press the latch on the front of the armrest and lift the lid.

Note

- The console lid should not be forced further backwards, than vertical.
- Ensure the lid is closed and latched prior to stowing the armrest.

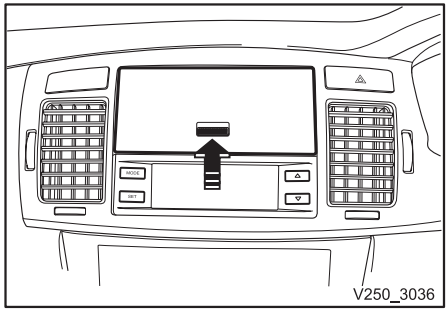


STORAGE COMPARTMENTS cont.

DASHBOARD STORAGE COMPARTMENT

The dashboard storage compartment is located between the centre vents.

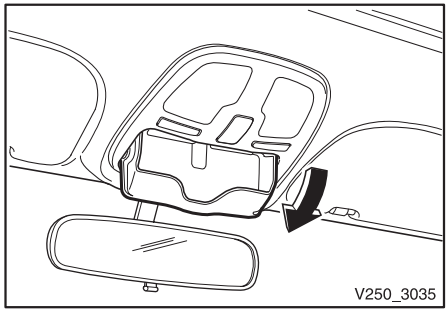
- To open the lid, push the locking button upwards and release it.
- To close, move the lid back to its original position and press in the bottom part to engage the latch.



SUNGLASSES HOLDER

The sunglasses holder is located in the roof and is designed to accommodate one pair of sunglasses.

- To open, push in the rear of the lid and release it.
- To close, swivel the holder back to its original position and press in the rear of the lid to engage the latch.



STORAGE COMPARTMENTS cont.

CUP HOLDERS

Cup holders are designed for holding standard size soft drink cans and smaller size bottles. Larger drink bottles or cups should not be forced into the cup holders, or they may become jammed.

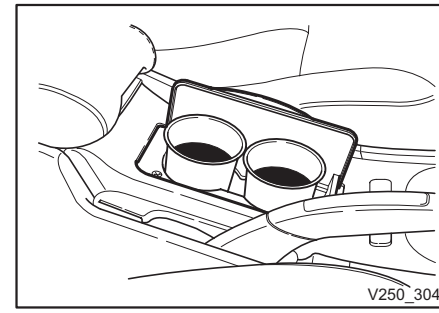
Note Only place cups with lids in the cup holders. This helps to avoid spillage while accelerating and braking.

WARNING
To avoid scalding, never place hot drinks in the cup holders.

Front cup holders – centre

The centre cup holders are located forward of the centre console. The two cup holders are a different size to suit most cups.

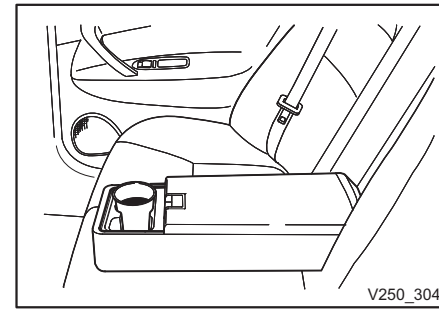
Lift the cover up from the driver's side to gain access to the cup holders.



Rear cup holders

Cup holders are fitted to the front of the rear armrest in the centre of the rear seat.

Note Remove all cups from the rear holders before folding back the centre section.

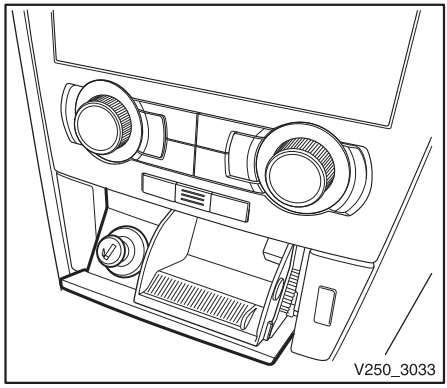


STORAGE COMPARTMENTS cont.

ASHTRAY AND CIGARETTE LIGHTER

Front ashtray

- To access the ashtray, push in the top part of the lid and release it, this will expose the ashtray and cigarette lighter.
- To empty the ashtray, grasp the receptacle and carefully pull it up.
- To close, move the lid back to its original position and press in the top part to engage the latch.



Cigarette lighter

The cigarette lighter is housed inside the front ashtray assembly and can be operated when the ignition is in the **ACC** or **ON** position.

WARNING

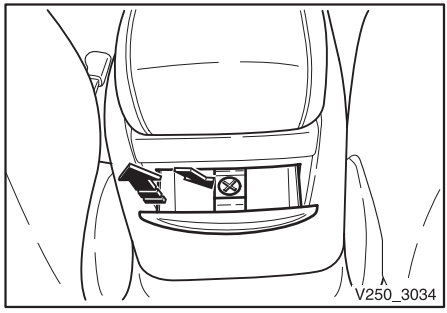
- To avoid any damage never hold the lighter pressed in.
- Do not use the cigarette lighter as a power socket. Use the power socket located underneath the front ashtray.

Press in the lighter and release. The lighter will pop out automatically as soon as the element is hot.

Rear ashtray

The rear ashtray is located at the rear of the centre console.

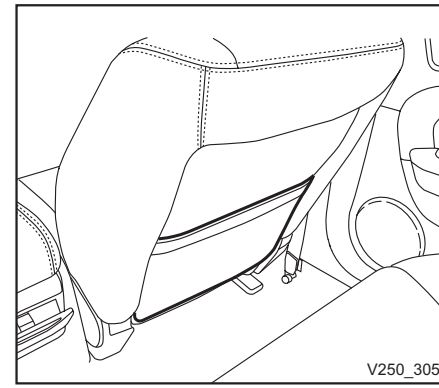
- To open, pull the top part of the cover outwards.
- To empty the ashtray, push down on the release tang and carefully pull the receptacle out.
- To close, push in the top part of the cover.



STORAGE COMPARTMENTS cont.

FRONT SEAT-BACK POCKETS

A storage pocket is located on the rear of both front seats.

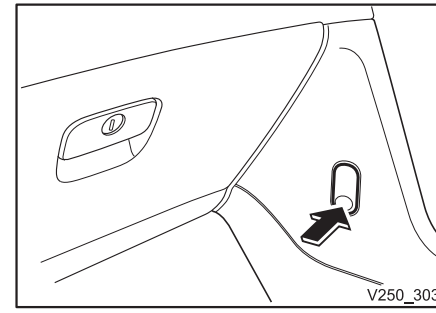


SHOPPING HOOK

A shopping hook is located on the passenger side of the centre console.

To access, push in the bottom section to expose the hook. The hook is spring loaded and will return to its flush position when not in use.

WARNING
Do not hang a bag that weighs more than 3 kg. Doing so may damage the hook.

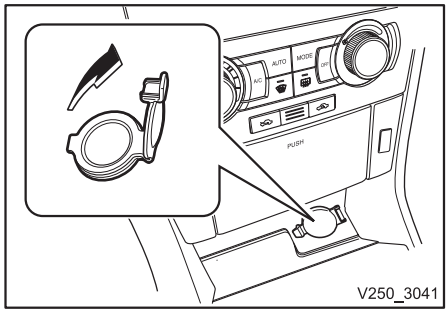


POWER SOCKET

The power socket is located underneath the front ashtray.

The power socket is operational when the ignition is switched to either the **ON** or **ACC** position.

Note Any accessory device (e.g. mobile phone, car fridge) connected to the power socket must not exceed a current draw of 10 amps.



WARNING
It is dangerous for the driver of a vehicle to attach or remove accessories from the power socket while driving. It may distract the driver's attention, putting the occupants of the vehicle and other road users at risk.

NOTES

CHAPTER 4

Driving

Page

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*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

SAFETY

BEFORE ENTERING THE VEHICLE

- Check that windows, mirrors and lamps are clean.
- Visually check tyre inflation.

Note Check the tyre pressures each week.

BEFORE DRIVING OFF

1. Ensure that all doors are closed and secured.
2. Position your seat for comfortable driving.
3. Adjust rear view mirrors.
4. FASTEN SEATBELTS.
5. Check that the warning indicators illuminate when turning the key to start the engine. Refer to *Warning/reminder indications* in chapter 1.

PARKING

1. Apply the park brake.
2. Select position **P** (park).
3. Shut all windows.
4. Turn the ignition key to the **LOCK** position and remove the key.
5. Press the button on the key to lock all doors and to arm the alarm system when outside of the vehicle. Refer to *Locking* in chapter 2.

Note The engine fan may keep going for several minutes after the ignition has been switched off. This is normal.

WARNING

- Be careful where you park or drive. As with any vehicle, do not park or operate the vehicle in areas where combustible materials such as dry grass or leaves can come in contact with a hot exhaust system.
- Exhaust gases are hazardous, especially if they concentrate in closed rooms. Never leave the engine running in an enclosed space such as a closed garage or underground car park.

DRIVING PRECAUTIONS

TURBOCHARGER* (DIESEL ONLY)

Operating precaution, engine starting

Do not operate the engine above idle before the normal engine oil pressure has been established (such as applying full throttle immediately upon initial start-up). This causes the turbocharger to operate at excessive speed before the bearings receive adequate lubrication. Operation of the turbocharger for a period as short as five seconds without sufficient oil can cause bearing failure.

RUNNING-IN

There is no need to follow a formal running-in schedule. However, by observing a few simple precautions during the first few hundred kilometres of driving you will greatly assist the vehicle's future performance and economy.

- Avoid using heavy acceleration for the first 500 km.
- Up to 1,500 km, avoid driving at any one speed, either slow or fast, for any length of time. Avoid using the cruise control while running-in. Include some higher speeds during this period. Always drive at moderate speed until the engine has completely warmed up.
- It is recommended that the new vehicle be driven for at least 1,500 km before towing. If the vehicle must tow before this do not exceed 80 km/h. The same applies if the vehicle is fitted with a new or reconditioned engine or transmission.

BRAKES

The power assisted brakes fitted to the vehicle use vacuum from the engine when it is running. Therefore, never let the vehicle run down hills with the engine off, or coast after switching the engine off.

Position your seat so that you can push the brake pedal easily. Nothing should be under the brake pedal which could limit pedal travel, for instance, poorly fitting floor mats.

Continuous or heavy use will shorten the life of the brake pads.

POWER STEERING

The power steering fitted to the vehicle has been designed to reduce steering effort.

Note Take care not to hold the steering wheel fully turned when stationary (for example, when waiting before turning a corner) as this generates high operating temperatures and pressures within the system.

If power steering is not working, due to the engine stalling for example, the vehicle can still be steered. However, due to the much greater effort required to steer, it is recommended that you have the problem fixed as soon as possible.

SPEED SENSITIVE POWER STEERING (SSPS)* (DIESEL VEHICLES ONLY)

The SSPS system varies the driver effort required to steer as the vehicle speed changes.

At low speeds the system provides maximum assistance for easy turning and parking manoeuvres. At higher speeds the assistance is reduced to provide firmer steering and directional stability.

If the SSPS warning lamp illuminates the effort required to steer will increase. Contact your Holden Dealer as soon as possible. Refer to *Warning/reminder indications* in chapter 1A.

DRIVING PRECAUTIONS cont.

LOADING THE VEHICLE

Loading the vehicle changes the mass distribution and therefore the handling when driving. After loading the vehicle, take care to become familiar with the vehicle's driving characteristics. Refer to *Loading the vehicle* in chapter 9.

LOOSE ARTICLES

Do not leave loose articles or luggage in the passenger compartment. Whenever possible, stow articles in the boot. Firmly secure loads stowed in the boot.

WARNING
Portable gas cylinders can leak, creating a risk of fire or explosion. As a precaution, ensure adequate ventilation when carrying gas cylinders. They must be restrained from rolling around, and where possible, placed in the boot of the vehicle. It is recommended that if gas cylinders are frequently transported that a purpose-built carrying compartment be used. Transportation of gas cylinders is regulated by legislation in some countries.

MOBILE PHONES AND CB RADIOS

Mobile phones and CB radio equipment which use an integrated antenna may temporarily affect the vehicle's electronics (permanent damage is unlikely) when used inside the vehicle, due to the interference created when transmitting.

Therefore, use mobile phones and CB equipment that utilise an antenna fitted to the outside of the vehicle whenever possible.

If using mobile phones or CBs with an integrated antenna inside the vehicle, avoid using near the dashboard area, as some functions may be affected.

WATER CROSSING

Before crossing water, switch off the air conditioning.

Crossing deep water could damage the engine. It is recommended that the water depth be no more than 175 mm and speed be limited to a walking pace. Brakes may then need drying out; lightly apply the brakes while maintaining a slow forward speed, with a clear area ahead, until brake performance returns to normal.

TYRE GRIP

A decrease in tyre grip occurs when water, snow, ice, gravel or other materials are on the road. Adjust your driving to the road conditions.

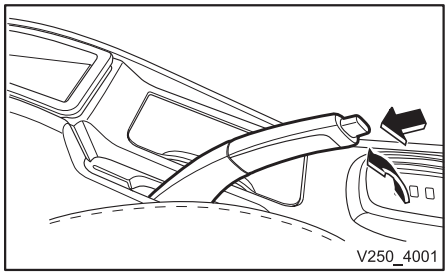
When driving on wet or slushy roads, a wedge of water may build up between the tyre and road surface. This phenomenon, known as hydroplaning, may cause partial or complete loss of grip, which affects steering and braking. To reduce the possibility of hydroplaning:

- Reduce speeds during wet conditions.
- Replace tyres when tread wear indicators are visible.
- Regularly check that tyres are properly inflated.

PARK BRAKE

OPERATING THE PARK BRAKE

The park brake lever is located between the front seats.



Applying the park brake

To apply, pull the lever straight up, without pressing the release button. When the ignition is switched on and the park brake is applied, the park brake warning lamp Ⓘ(Ⓟ) on the instrument panel illuminates.

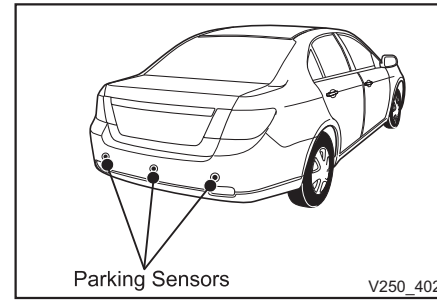
Releasing the park brake

To release, pull the lever slightly upwards, push in the release button on the top of the lever and while pressed, lower the lever all the way down.

WARNING
Never drive the vehicle with the park brake applied.

*REAR PARK ASSIST**

The Rear park assist system is able to detect and indicate obstacles at the rear of the vehicle when reversing. The system consists of three sensors on the rear bumper, a control unit and a speaker in the vehicle's interior.



WARNING

- The driver is always responsible for taking care and attention while manoeuvring the vehicle. The Rear park assist is only an aid and is neither intended to, nor able to take over any responsibility.
- The rear park sensors may not be able to detect all objects under every condition e.g. objects too close to the vehicle, objects above or below the sensors, or objects with a surface that absorbs ultrasonic waves. Additionally, some ambient conditions like ultrasonic waves or heavy rain can cause disruptive reflections from an object's surface. Such objects may not be detected.
- Always manoeuvre the vehicle slowly to allow yourself sufficient time to react. The warning alarms will sound only while the vehicle's speed is below 5 km/h.

Activating

The Rear park assist system is activated automatically when:

- the ignition is switched on,
- reverse gear is selected and
- the vehicle's speed is below 5 km/h.

A short single confirmation alarm will sound to confirm that the sensors are operational.

Note The system will be deactivated when the vehicle's speed raises above 5 km/h.

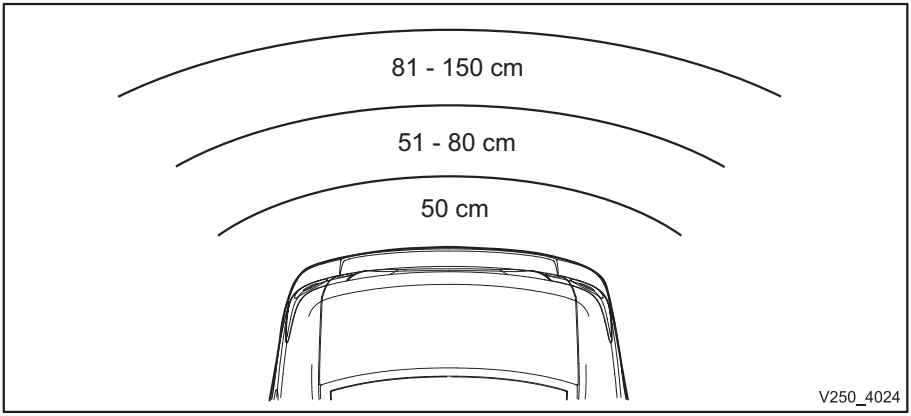
A fault in the Rear park assist system is indicated by:

- The alarm sounding three times continuously when there are no obstacles around the rear bumper.
- The Rear park assist lamp P illuminating while driving. Refer to *Warning/reminder indications* in chapter 1A.

The Rear park assist system may not work properly during a malfunction. You should manoeuvre the vehicle with special care. Check the sensors and clean them if necessary. If the malfunction persists, have the system checked by your Holden Dealer.

PARK ASSIST cont.*

Approximate range of sensors



Alarm tones

When the vehicle approaches an obstacle the sensors will start detecting at a distance of approximately 81 cm - 150 cm. At this distance the alarm tones will sound with a long pause between tones.

As the vehicle manoeuvres closer to the obstacle, the pause between the alarm tones becomes shorter.

When the vehicle's rear bumper is approximately 50 cm from the obstacle the alarm tone will sound continuously.

Alarm	Sensing distance from bumper	Alarm tone
1st alarm.	approx. 81~150 cm.	beep---beep---beep
2nd alarm.	approx. 51~80 cm.	beep-beep-beep
3rd alarm.	approx. within 50 cm.	Alarm stays on.

Notes on operation

- If the sensors receive other ultrasonic signals, e.g. metallic sounds or exhaust brake noise from heavy commercial vehicles, the Rear park assist system may not work properly.
- The Rear park assist system may not activate if the sensors are frozen or covered with dirt.
- Clean dirty sensors with a soft sponge and clean water.
- Do not impact or shock the sensors by hitting or directing a high pressure water cleaner directly at them while washing, as the sensors may become damaged.
- The Rear park assist system may not operate correctly when the vehicle is driven over uneven surfaces.
- The Rear park assist system may not recognise sharp objects, thick winter clothes or other materials which absorb ultrasonic waves.

ENGINE STARTING

1. Ensure that the park brake is firmly applied and release it only after you have started the engine and are ready to drive off.
2. Move the transmission gear selector to position **P** (park) or **N** (neutral). The engine will not start if the transmission gear selector is in any other position.
3. For cold or hot starting:

   Petrol engine: Without touching the accelerator pedal, turn the key to the **START** position and release it when the engine starts. If the engine starts momentarily but fails to run, wait for 10 seconds, then try again.

   Diesel engine: Without touching the accelerator pedal, turn the key to the **ON** position. When the glow plug (preheat system) indicator lamp extinguishes, turn the key to the **START** position until the engine starts. The key automatically returns to the **ON** position when released.

   Note

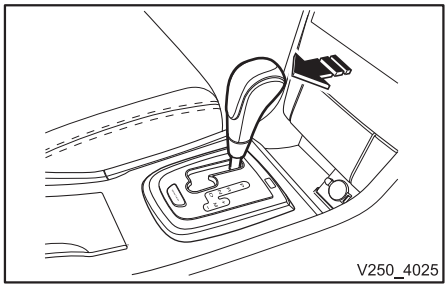
   - Diesel preheating (glow plugs) system switches on only if the outside temperature is low.
   - If the engine starts momentarily but fails to run, wait for 10 seconds and try again.
   - Do not depress the accelerator pedal while starting the engine. This would only increase cranking time and will not help the engine to start.
   - Do not subject the engine to high load conditions such as full throttle acceleration or high speeds until it has reached normal operating temperature (as indicated on the instrument panel temperature gauge). Failure to comply may cause premature engine wear or engine damage.

TRANSMISSION OPERATION

AUTOMATIC TRANSMISSION

Gear selector lever

Press the select button on the front of the transmission gear selector lever to move to the required position.



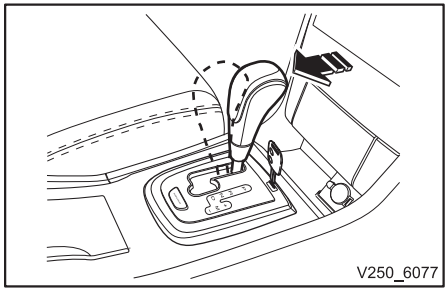
Gear display

When the position of the transmission gear selector lever is changed, the selected lever position is displayed and changes according to the selector lever's movement. The lever positions displayed are **P R N D.** When in active select mode the currently selected gear will also be displayed.

Shift lock control system (automatic transmission)

Your vehicle has a Brake-Transmission Shift Interlock (BTSI) system. Before shifting from **P** (park), the ignition must be in the **ON** position and the brake pedal must be applied.

If the system does not respond to the above procedure and the shift lever can not be moved, use the following procedure:



1. Switch off the ignition and remove the key.
2. Apply and hold the brake pedal.
3. Remove the cap from the transmission shift lock slot.
4. Insert and press the ignition key into the transmission shift lock slot.
5. Shift the gear lever to **N** (neutral).
6. Remove the key from the slot.
7. Reinstall the cap.
8. Start the engine and shift the transmission into the desired position.
9. Refer to your Holden Dealer as soon as possible.

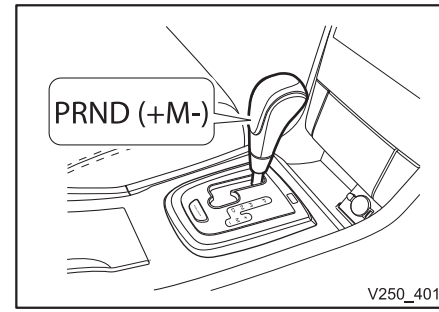
Note

- If the shift lever is returned to the **P** (park) position, the above procedure will need to be repeated to shift the lever into **N** (neutral).
- The above procedure will need to be carried out if the vehicle has a flat battery and requires towing.
- Refer to *Towing a disabled vehicle* previously in this chapter.

TRANSMISSION OPERATION cont.

Automatic transmission selector lever positions

Note The engine will not start unless the transmission gear selector is in position **P** (park) or **N** (neutral).



P (Park) This stops the front wheels from rotating and should be selected (together with the park brake) when leaving the vehicle. Never select **P** until your vehicle is stationary. The **P** position is one of only two positions (the other is **N**) in which your engine may be started.

Note The vehicle is equipped with Brake Transmission Shift Interlock (BTSI). To move the transmission gear selector lever out of position **P** (park), have the ignition switched on and depress the brake pedal. If the vehicle's battery is flat, refer to *Shift lock control system* in chapter 6.

WARNING
- Selecting position **P** while the vehicle is still moving can cause damage to the transmission.
- Do not press the accelerator pedal with the brakes on in any gear except position **P** (park) or **N** (neutral). This will overheat the transmission.

R (Reverse) Never select **R** until your vehicle is stationary. The reversing lights operate when **R** is selected and the ignition is on.

After selecting **R**, pause for a moment before accelerating to allow the transmission to engage reverse gear.

N (Neutral) This is the out-of-gear position, i.e. the transmission is disconnected from the driveline. If necessary, the vehicle can be moved without the engine running, e.g. to be towed or pushed. Refer to *Towing a disabled vehicle* in chapter 6.

You may restart a stalled engine while the vehicle is still moving or stopped.

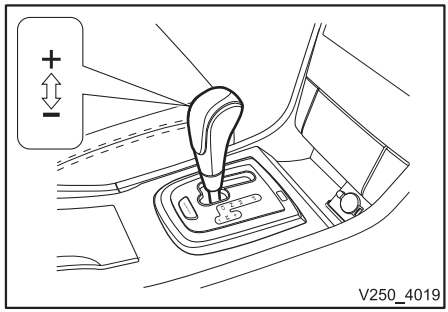
WARNING
- To prevent the vehicle from moving when position **N** is selected, always apply the park brake, depress the foot brake or use suitable chocks to block the wheels.
- Do not coast the vehicle in position **N** (neutral) – this decreases your control and ability to accelerate quickly in an emergency.

TRANSMISSION OPERATION cont.

D The drive position is for all normal driving conditions. It allows the transaxle to shift into all six forward gears.

WARNING
Do not use the accelerator pedal to hold the vehicle stationary on an uphill slope. Use the brakes.

Active select mode



Whether your vehicle is stationary or in motion, active select mode is selected by pulling the select lever from the **D** position, into the right manual gate. To return to **D** range operation, push the select lever back to the left into the **D** position.

In active select mode, moving the select lever backward and forward makes rapid gear shifts possible. In contrast to a manual transmission, the active select mode allows gearshifts with the accelerator pedal depressed.

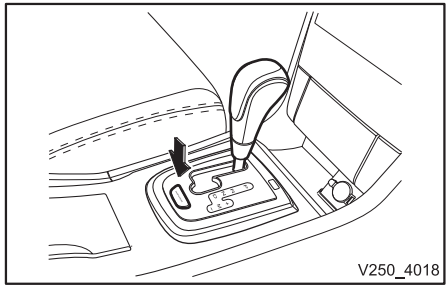
UP (+) Push the lever forward once to shift up one gear.

DOWN (-) Pull the lever backward once to shift down one gear.

Note

- In active select mode, only the six forward gears can be selected.
- To reverse or park the vehicle, move the select lever to the **R** or **P** position as required.
- In active select mode, downward shifts are made automatically when the vehicle slows down. When the vehicle stops, 1st gear is automatically selected.
- To maintain the required levels of vehicle performance and safety, the system may not execute certain gear shifts when the select lever is operated.
- Before driving away from a stop on a slippery road, push the select lever forward into the **+** (up) position. This causes the transmission to shift into 2nd gear for a smooth start. Pull the select lever to the **–** (down) position to shift back to 1st gear.

WINTER MODE



Use the winter mode in the event of starting off or driving on icy and slippery roads. This mode will reduce slipping and loss of traction.

- To activate winter mode, push the **WINTER** button on the console. The WINTER mode warning lamp will illuminate on the instrument panel.
- Push the **WINTER** button again to turn winter mode off.

If the WINTER mode indicator lamp flashes, have your vehicle checked by a Holden Dealer immediately.

ACTIVE SAFETY SYSTEMS

ANTI-LOCK BRAKE SYSTEM (ABS)

Monitoring

The Anti-lock Brake System (ABS) continuously monitors the vehicle's braking system and prevents the wheels from locking up when braking. ABS starts to regulate the braking as soon as a wheel shows a tendency to lock. The ABS allows maximum braking effort while full steering control is retained, even in the event of panic braking.

WARNING
Do not let this special safety feature tempt you into taking risks when driving. Traffic safety can only be achieved by adopting a responsible driving style. You should always adjust the vehicle's speed to suit road and traffic conditions. Always maintain an adequate distance to the vehicle in front of you.

Operation

When active, ABS operation is noticeable by pulsing of the brake pedal and the noise of the regulation process. To achieve optimum braking, keep the brake pedal pressed fully throughout the braking process. Use this as a reminder to match the vehicle's speed to the road conditions, even though ABS is keeping control of the braking.

Note In an emergency braking situation, keep full force on the brake pedal without pumping it. Pumping the brake pedal can reduce brake efficiency when ABS is controlling the braking.

The (ABS) warning lamp briefly illuminates when the ABS performs a self check each time the ignition is switched on.

If the (ABS) warning lamp (ABS off) in the instrument panel does not extinguish or illuminates when driving, a malfunction in the system has occurred.

Note The vehicle's brake system remains operational, but without ABS assistance. Have your Holden Dealer check the system as soon as possible.

ACTIVE SAFETY SYSTEMS cont.

ELECTRONIC STABILITY PROGRAM (ESP®)

Monitoring

The Electronic Stability Program (ESP®), is an advanced feature that works in conjunction with the vehicle's Anti-lock Braking System (ABS) and includes the Traction Control System (TCS). When required, the ESP® improves driving stability in any driving situation.

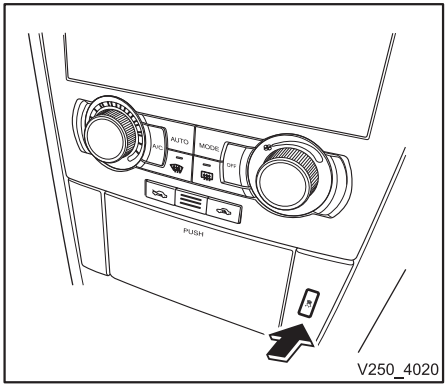
The ESP® assists in maintaining vehicle stability by providing intervention when the vehicle's grip level is exceeded (such as a sudden lane change, slippery or unexpected road conditions). The ESP® processes information from the various vehicle sensors and can intervene by altering engine power and/or braking on specific wheels as required. This can improve the vehicle's steering control and power delivery on wet or slippery roads, particularly on snow or ice.

WARNING
Do not let this special safety feature tempt you into taking risks when driving. Traffic safety can only be achieved by adopting a responsible driving style. The vehicle's speed should always be adjusted to suit road and traffic conditions.

ESP® off button

In certain conditions it may be helpful to disable the ESP® by pressing the ESP® off button located under the heater controls. The ESP® operation lamp will illuminate as a warning to the driver that ESP® is turned off. For example, if the vehicle is bogged in deep mud or sand, it may be possible to get more traction from a slightly spinning wheel.

Pressing the ESP® off button again will resume the ESP® function and the ESP® operation lamp will extinguish.



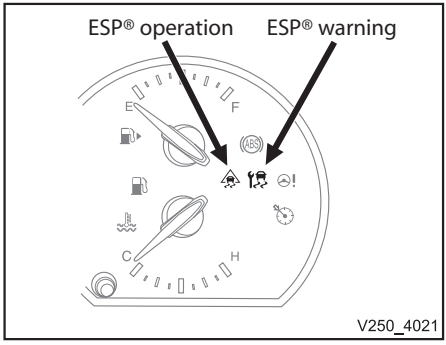
ESP® operation

The ESP® function operates automatically in very unstable conditions. It does not operate under normal driving conditions.

The ESP® operation lamp flashes while ESP® is actively helping the vehicle with road grip and stability.

ESP® warning

If the warning lamp illuminates constantly, this indicates there is a malfunction in the system. Contact your Holden Dealer.



ACTIVE SAFETY SYSTEMS cont.

Hydraulic Brake Assist system (BA)

The BA is incorporated in the ESP® unit and detects when the driver is applying the brakes in a panic stop situation by recognising how rapidly the accelerator is released and the brake pedal is applied. The BA initiates ABS earlier, shortening the stopping distance required.

Traction control system (TCS)

The TCS uses sensors that detect imminent wheel spin. If one wheel is about to spin, braking is applied to transfer torque to a wheel with better traction. This improves performance when starting off and accelerating.

WARNING

Tyre size is important for proper performance of the ABS, TCS and ESP® systems. Replacement tyres should be the same size, load rating and construction as the original tyres. Replace tyres in axle sets and only with tyres of the same specification.

The use of any size or type of tyre other than specified may seriously affect the ABS, TCS and ESP® operation.

ADD ON EQUIPMENT

SNOW CHAINS

WARNING
- Snow chains should be fitted only on the front (drive) wheels.
- Snow chains may only be used at speeds up to 50 km/h.
- Snow chains should only be used for short distances if the roads are not snow covered. The hard road surface causes rapid wear and the chain may break.
- Only use snow chains conforming to SAE class S-type.
- Snow chains must not be used on the spare wheel.

Ensure that tyre pressures are as recommended on the tyre placard. Refer to *Tyres* in chapter 7.

Note
- Whenever snow chains are fitted, the ESP® should be switched off, otherwise ESP® might show unusual operating characteristics. Refer to *Electronic Stability Program (ESP®)* previously in this chapter.
- Follow the chain manufacturer's instructions.
- Re-tighten the chains after driving approximately 1 km.
- Snow chains are not recommended for the rear tyres.

FITTING ROO OR NUDGE BARS

WARNING
Fitment of roo or nudge bars is not recommended as it may affect crash performance, airbag performance and engine cooling.

NOTES

CHAPTER 5

Fuel

Page

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Emission control 5-5

Reducing fuel consumption 5-7

WARNING

The vehicle's engine has not been designed for conversion to LPG. The performance and safety of the vehicle would be seriously jeopardised if converted to LPG.

*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

FUEL

EXHAUST WARNING – CARBON MONOXIDE POISONING

Exhaust gases can produce carbon monoxide, a dangerous gas, which can cause unconsciousness and even death to both humans and animals.

Gases could be inhaled if the exhaust system on your vehicle is faulty.

To protect against exhaust gases entering the vehicle, the exhaust system and body should be inspected:

- each time the vehicle is serviced,
- whenever a change is noticed in the sound of the exhaust system,
- whenever the exhaust system, underbody or rear of the vehicle is damaged.

Take the vehicle to your Holden Dealer if you think the vehicle needs inspecting for any of the above reasons.

Do not sit (or leave children or pets) in a parked vehicle for any extended period of time with the engine running. Do not run the engine in an enclosed area (such as the garage) any longer than is needed to move the vehicle.

Driving with the boot open is not recommended. If you must travel with the boot open, close all windows, ensure that the heater controls are set to outside (rather than recirculate) with air directed to the face and the fan on the highest speed. Do not exceed 50 km/h.

FUEL WARNING

- Fuel is extremely flammable and highly explosive.
- Always switch off the engine and any mobile phones when refuelling.
- Do not smoke or allow open flames or sparks near the vehicle when refuelling.
- If fuel fumes are smelt while driving, the cause should be found and corrected without delay by a Holden Dealer.
- Static electricity can ignite fuel vapour. Only use pumps, hoses and containers that are properly grounded when filling up with fuel.
- To avoid injury, to you and to others, read and follow all instructions on the fuel station pump.

FUEL cont.

WARNING – FUEL ADDITIVES
Various additives are used in the formulation of good quality fuel and the use of supplementary additives in fuel is not required unless specified by Holden. Under no circumstances should fuel containing the manganese additive known as MMT (methyl cyclopentadienyl manganese tricarbonyl) be used, as this additive is known to cause contamination of catalytic converters, spark plugs and the malfunction of On-Board-Diagnostic (OBD) systems. The use of fuel additives that are not recommended by Holden may affect your New Vehicle Warranty to the extent that Holden considers that the additives affect the specifications and quality of the vehicle.

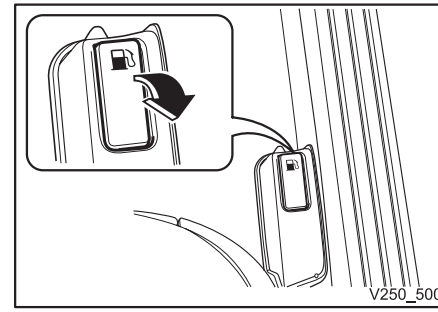
WARNING – USE OF FUEL CONTAINING ETHANOL (PETROL ENGINES)
When purchasing such fuel, we recommend that the vehicle be operated on fuel containing no more than 10% ethanol. Purchasing fuel from a reputable fuel retailer may reduce the risk of purchasing fuel with more than 10% ethanol or fuel which contains abnormal fuel properties. Under no circumstances should fuel containing more than 10% ethanol be used. Use of such fuels may result in engine malfunction, starting and operating difficulties, and materials degradation, resulting in permanent damage to the vehicle and the risk of personal injury. It is also important to note that when ethanol blends are used, fuel consumption can be expected to increase due to the lower energy content of ethanol.

The use of any fuel, other than the fuel specified on the following page, may seriously damage the vehicle and may void the warranty. Only clean fuel of good quality should be used. The use of fuel containing more than 10% ethanol may also affect your New Vehicle Warranty to the extent that Holden considers that the fuel affects the specifications and quality of your vehicle.

REFUELLING

Always fill the fuel tank at the intermediate or fast fill rate. Do not add any more fuel after the fuel filler first clicks off or fuel blows back – this allows room for the fuel to expand inside the tank. Only trickle-fill fuel tanks when the vehicle is to be driven for more than 50 km immediately after the tank is filled. However, this is not recommended on days over 30 °C.

Wipe off any overflowing fuel immediately from the vehicle; spray or splash with water (replace the fuel cap and close the fuel opening before spraying with water).



Fuel filler flap

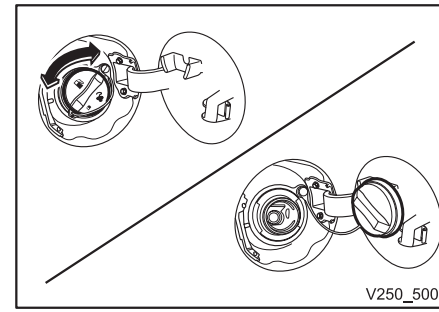
- To open the fuel filler flap, pull the lever located at the base of driver's seat on the right hand side upwards.
- To close, push the flap in.

FUEL cont.

Fuel cap

The fuel cap, under the fuel flap, is a ratchet type cap that is tethered to the vehicle. To open, turn the cap anticlockwise. After refilling, tighten the cap clockwise until a clicking noise is heard and then close the fuel flap.

Note The fuel cap may be stored on the fuel filler flap while refuelling.



Tank capacity

Refer to *Specifications* in chapter 8.

FUEL TYPES

Fuel requirements for petrol engines

Use unleaded petrol of regular 91 Research Octane Number (RON) rating or higher. Use of Premium unleaded petrol (95 RON or higher) may provide a small improvement in performance and fuel economy.

Fuel requirements for diesel engines

Diesel engines must be operated only on commercially available diesel fuel meeting the requirements of Euro standards EN590. The use of bio-diesel containing up to 5% fatty acid methyl ester (“FAME”) also known as “B5” is also permitted provided that the FAME meets the Euro Standard EN14214, and the resultant B5 blend meets Euro Standard EN590. Do not use marine diesel oils or heating oils.

WARNING
Use only bio-diesel blends containing up to a maximum of 5% FAME that meets Euro standards EN590. Purchasing your fuel from a reputable fuel retailer may reduce the risk of purchasing fuel with more than 5% FAME or fuel which contains abnormal fuel properties. Use of any other bio-diesel that does not have the certification referred to above, or has a FAME content exceeding 5%, may cause serious damage to your vehicle (including engine failure). Damage attributable to the use of non certified bio-diesel is not covered by your New Vehicle Warranty. In no event will GM Holden be responsible or bear any liability for any damage or loss that may arise in connection with the use of any fuel that does not meet this specification.

LPG conversion

Your vehicle was not designed to be converted to LPG. Holden does not provide LPG conversion kits for these vehicles. Your New Vehicle warranty may be invalidated to the extent that any LPG alterations affect the specifications of your vehicle. Refer to the Service/warranty booklet.

EMISSION CONTROL

OWNER RESPONSIBILITY

The engine, engine control system and exhaust system of the vehicle must NOT be modified in any way. Any change to the design may increase the emissions or otherwise defeat the intent of the regulations.

WARNING
Any person who removes, modifies or hinders any part of the emission control system may be contravening Australian Design Rules. It is also illegal to drive a vehicle modified in this way.

MAINTENANCE REQUIREMENTS

To ensure continuing compliance with the regulations, you must have the vehicle serviced at the frequency shown in the *Maintenance schedule*, in the Service/warranty booklet. Your Holden Dealer will maintain the vehicle's emission control system as per the vehicle's service manual.

It is recommended that the necessary servicing be performed by an authorised Holden Dealer who has the specialised servicing equipment and trained personnel available to ensure that the adjustments and services specified are carried out.

PETROL ENGINE

The vehicle is fitted with emission control systems, which are designed to reduce the amount of hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) that are emitted from the engine and fuel system into the atmosphere. Hydrocarbons and oxides of nitrogen, when exposed to sunlight under certain conditions, contribute to photochemical smog. In addition, carbon monoxide is toxic when it becomes highly concentrated in the air.

The three major emission control systems that may be fitted to the vehicle are:

1. **Evaporative emission control system**

   This system is designed to prevent the escape of fuel vapour from the fuel system and recycle the vapours through the normal combustion process.

2. **Crankcase emission control system**

   This system is designed to prevent blow-by gases from escaping into the atmosphere and recycle them through the combustion process.

3. **Exhaust emission control system**

   The various components of this system operate collectively to limit HC, CO and NOx emissions in the exhaust gas. The exhaust emission control system is comprised of components including electronic control of spark, fuel and idle speed. In addition vehicles have a catalytic converter and closed loop mixture control system.

Note For service and repair to the vehicles fuel or emission systems contact your Holden Dealer.

EMISSION CONTROL cont.

DIESEL ENGINE

Diesel particle filter*

The diesel particle filter system filters damaging soot particles out of the engine exhaust. The system has a self-cleaning function that runs automatically while the vehicle is in motion. The filter is cleaned by burning off the residual soot particles at high temperature. This procedure runs automatically and can take up to 25 minutes.

The system cannot clean itself automatically under certain driving conditions such as short distance driving.

Under normal operating conditions and in most cases, the indicator lamp will not illuminate during the automatic cleaning process, however, in some cases where the filter needs to be cleaned and if previous driving conditions did not allow the cleaning process to take place, the control indicator flashes. As soon as the road and traffic situations permit it, increase speed to more than 40 km/h without dropping engine speed below 2,000 rpm. The control indicator goes off as soon as cleaning is complete.

Note

- The engine cooling fan and rear window demister come on during cleaning.
- Fuel consumption may increase during this time.
- The odour and smoke that are generated are normal.

WARNING

- Damage to the diesel particle filter or the vehicle may result if the following are not observed:

  Consult your Holden Dealer, as quickly as possible in the event of irregular engine running, a significant loss of engine power or other unusual malfunctions. If necessary, driving may be continued for a short time at a low speed and with a low engine speed.

Irregular engine running and a loss of engine power when the Electronic Stability Program (ESP®) comes into action are the result of operating conditions and are therefore of no significance. Refer to *Electronic stability program* in chapter 4.

REDUCING FUEL CONSUMPTION

ENGINE

To keep the engine in peak mechanical condition, have it serviced regularly in accordance with the maintenance schedule. Refer to *Maintenance schedule* in the Service/warranty booklet. This ensures items such as the spark plugs, air cleaner and engine idle speed are maintained for minimum fuel usage and peak engine performance.

TYRE PRESSURE

Keep the tyres at the recommended pressures. Under-inflated tyres create extra rolling resistance which contributes to increased fuel consumption. Refer to *Tyres* in chapter 7.

Incorrect tyre pressures can also cause uneven and premature tyre wear.

WHEEL ALIGNMENT

Maintain correct front and rear wheel alignment. Incorrect alignment makes the wheels drag, which increases fuel consumption and causes uneven and premature tyre wear.

WARM UPS AND IDLING

Avoid long engine warm ups. They are unnecessary and waste fuel. An engine takes approximately 5 minutes to reach its efficient operating temperature and it does this most effectively when driving.

Avoid long engine idling. If you have to wait for more than a couple of minutes, switch off the engine to conserve fuel.

ACCELERATING, DRIVING AND BRAKING

Accelerate gently and avoid rapid starts. Sudden bursts of speed, full throttle acceleration and hard braking waste fuel.

Drive the vehicle at steady speeds where possible (after running-in).

RIDING THE BRAKE

Do not rest your foot on the brake pedal when you do not intend to brake, as this can overheat the brakes, increase brake pad wear, damage the brakes and waste fuel.

AIR CONDITIONING

Switch off the air conditioning when not required. However, once every 2 weeks, with the engine running, switch the air conditioning on for 5 to 10 minutes to lubricate seals (even in winter).

NOTES

CHAPTER 6

Emergencies

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*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

CUSTOMER ASSISTANCE

We want you to be happy with your new vehicle, together with the people you deal with while you have the vehicle.

Normally, any problems with the sales, operation, servicing, parts/accessories or the validity of original equipment supplied with your vehicle will be handled by your Holden Dealer's Sales and Service Department.

We realise however that, with the best intentions, misunderstandings sometimes occur.

Therefore, we suggest you discuss any concern with one of the Holden Dealer's management people. If you have not received satisfaction from the Sales Manager or Service Manager – go to the General Manager or to the Dealer Principal.

By now you should have satisfaction. If not, the Holden Customer Assistance office is at your disposal.

The Holden Customer Assistance representatives can be telephoned from anywhere within Australia for only the cost of a local call. The contact number is:

1800 033 349

Naturally, telephoning is the quickest and the best way to contact. However, if you prefer to write the address is:

The Manager
Holden Customer Assistance Centre
GPO Box 1714

Melbourne 3001

Your letter should clearly outline your concern or query, and include the following:

- Your name and address.
- Telephone numbers, both private and business.
- Servicing dealer's name and address.
- Vehicle model.
- Vehicle identification number (I.S.O.V.I.N.), refer to the inside front cover of the service booklet in your vehicle's glovebox.
- Date of purchase.
- Current odometer reading.

Most of this information will be found on the Vehicle Identification Certificate, located inside the front cover of the service booklet in your vehicle's glovebox.

Before you write however, remember that the telephone is the quicker and more efficient means of communication.

FOR NEW ZEALAND HOLDEN OWNERS

The information in this Owner's Handbook applies primarily to Australian Holden vehicles and there may be some differences to the Warranty and Owner Assistance provisions for New Zealand. Applicable details for New Zealand are set out in the Holden Warranty and Owner Assistance Information booklet enclosed in the New Zealand glovebox wallet.

New Zealand Assistance can be reached on:

0800 HOLDEN (0800 465 336)

This number provides access to New Zealand Roadside Assistance as well as New Zealand Customer Assistance.

If you prefer to write the address is:

The Manager
Holden Customer Assistance Centre
GPO Box 1714
Melbourne
Australia 3001

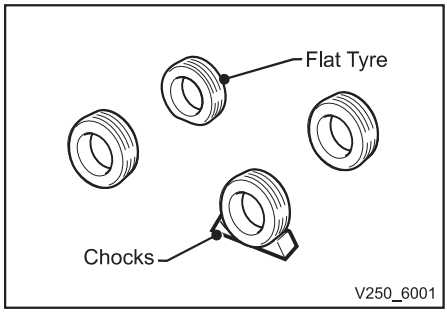
FLAT TYRE

WARNING

- All passengers must be out of the vehicle when it is being jacked.
- Do not jack a vehicle with a trailer attached. Remove the trailer first.
- Only jack the vehicle on hard, level surfaces.
- Use the jack only at the designated lifting points. Use in other locations may result in the vehicle falling off the jack, or damage to the vehicle.
- Do not start or run the engine while the vehicle is supported by the jack.
- Use the jack only for lifting the vehicle when changing wheels.
- Do not get under a vehicle supported only by a jack; use vehicle support stands.
- Vehicles with alloy wheels have a steel spare wheel fitted. Drive carefully and do not exceed 80 km/h when a combination of alloy and steel wheels are fitted on the vehicle. Although the spare tyre was fully inflated when the vehicle was new, it can loose air over time. Check the inflation pressure regularly. After installing the spare tyre on the vehicle, stop as soon as possible to check the inflation pressure is correct. Have the flat tyre repaired or replaced and installed back on to the vehicle as soon as possible.

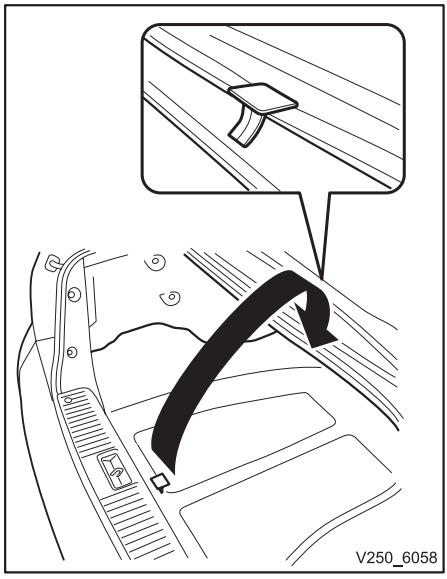
CHANGING A FLAT TYRE

1. Park on a hard, level surface, in a safe location, and set the park brake firmly. Switch the hazard warning flashers on.
2. Remove the ignition key and place the transmission selector lever in **P** (park).
3. Chock the wheel diagonally opposite the flat tyre with a suitable solid object.



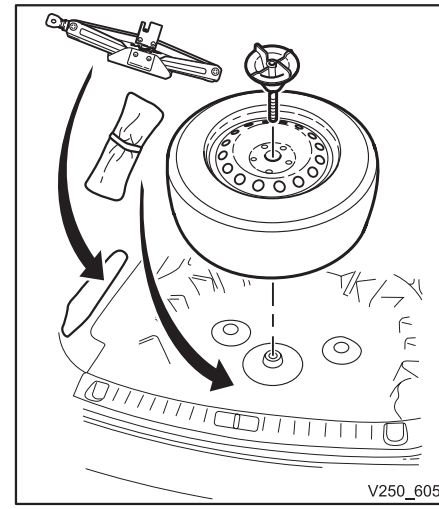
4. The spare wheel and tool kit are stored in a compartment in the floor of the boot. The jack is also stored in a compartment in the boot, situated to the left hand side.

   Open the boot and lift the spare wheel cover up by the handle. Latch the handle to the top of the boot trim.

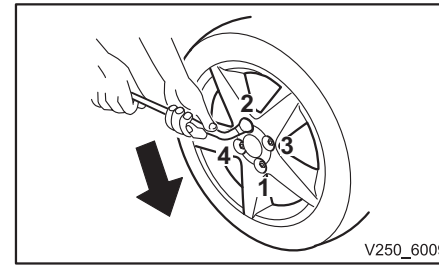


CHANGING A FLAT TYRE cont.

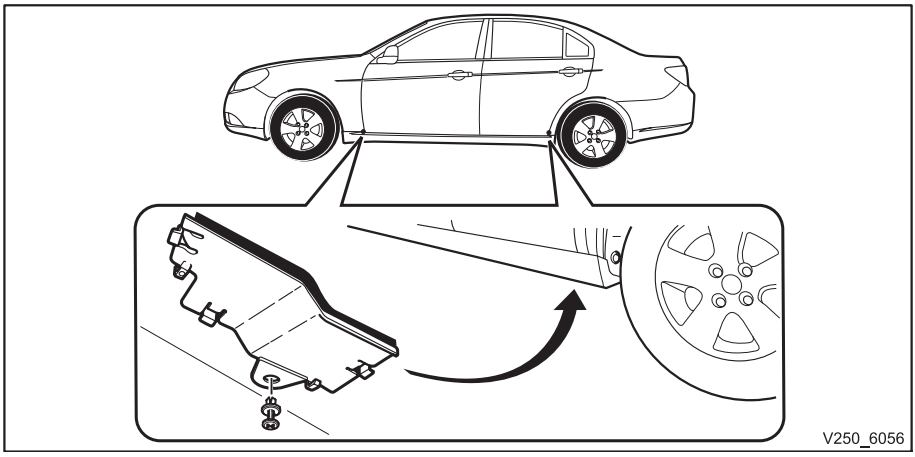
5. Unscrew the retaining bolt and remove the spare wheel. Remove the jack and tool kit. Place the tool kit, spare wheel and jack next to the wheel being changed.



6. Using the wheel nut wrench, loosen the wheel nuts in an anti-clockwise direction, one half to a full turn, but do not remove the wheel nuts.

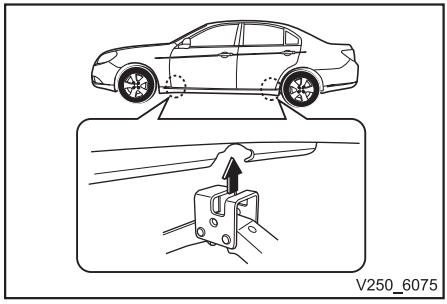


CHANGING A FLAT TYRE cont.



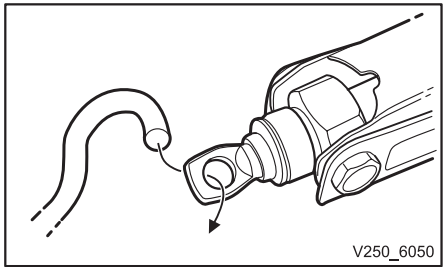
7. Remove the jacking location trim* to gain access to the jacking location. Unscrew the scrivet and push one of the locking tabs inward to slide the trim out.
8. Position the jack beneath the jacking location closest to the wheel being changed. There are 4 jack locations for use with the jack, identified by cutouts in the underside of the door sill.

   Note The jack must not be used in any other positions.
9. Wind the jack up by hand until it engages with the jacking point, ensure that the jack is not tilted and the base is resting squarely on the ground.



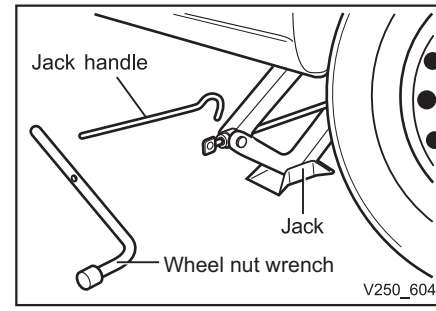
WARNING
- Failure to position the jack as described above could cause the vehicle to slip off the jack.
- Do not get under a vehicle supported only by a jack; use vehicle support stands.

10. Fit the jack handle onto the jack by sliding the hook through the loop on the end of the jack.



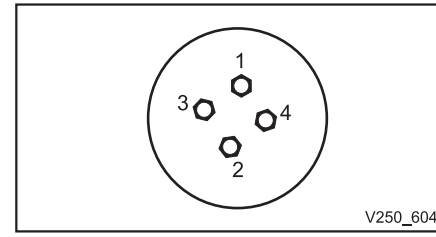
CHANGING A FLAT TYRE cont.

11. Attach the wheel nut wrench to the jack handle.



12. Turn the wheel jack handle assembly in a clockwise direction until the bottom of the flat tyre is about 10 cm above the ground.

    Note This extra 10 cm is required otherwise the inflated spare wheel will touch the ground when being fitted.
13. Remove the wheel nuts and place (together) in a dry place to avoid getting dirt in the threads.
14. Exchange the wheel on the vehicle with the spare wheel.
15. Replace the wheel nuts and lightly tighten with the wheel nut wrench.
16. Lower the vehicle by reversing the jacking procedure. Remove the jack from under the vehicle.
17. With the wheel on the ground, fully tighten the wheel nuts in the sequence shown.
18. Replace the tools and the flat tyre as shown in step 4 and 5.
19. To avoid movement of the tools and spare wheel, the retaining bolt should be tightened firmly by hand.



WARNING
As soon as possible after changing a wheel, have the wheel nuts tightened with a torque wrench to 120 ± 20 Nm (Newton metres). Wheel nuts must be tightened evenly to the correct torque in the sequence shown (refer to step 17), as wheel nuts which have not been tightened properly could eventually allow the wheel to come off while the vehicle is moving.

Trolley jack or vehicle hoist

Note If using a trolley jack or vehicle hoist to raise the vehicle, the jacking location trim* must be removed. Refer to page 6-7.

TOWING A DISABLED VEHICLE

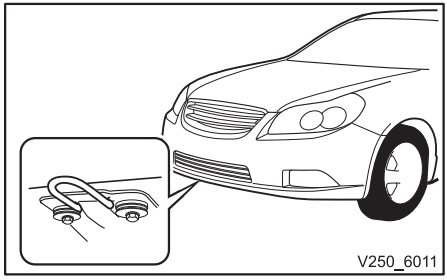
WARNING
- When towing on a flat tray tow truck, use wheel lashings and/or tie down hooks to secure the vehicle to the tray.
- Do not attach towing equipment to the bumpers or brackets, suspension or cross members.
- To prevent damage, use only proper towing equipment.

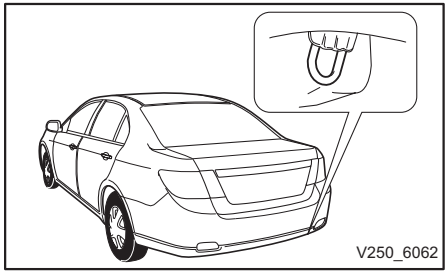
Towing hooks

Towing hooks are provided at the front and rear of the vehicle.

The towing hooks may be used to move a bogged vehicle a short distance or to pull the vehicle up onto a flat tray tow truck.

Note The towing hooks are not designed to tow the vehicle any distance.

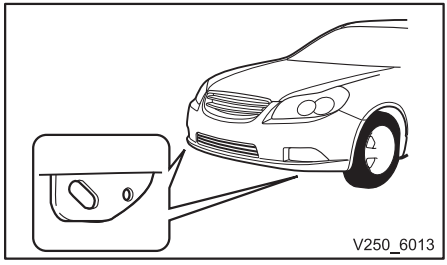




Tie-down hook

The tie-down hook is designed only for transport tie down.

WARNING
Do not use the front or rear tie-down hooks for towing.

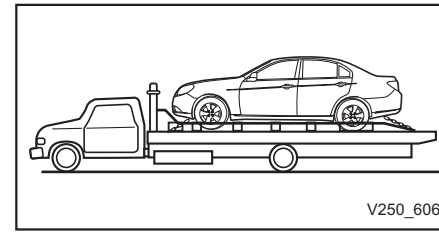


TOWING A DISABLED VEHICLE cont.

WARNING
- When towing on a flat tray tow truck, use wheel lashings and/or tie down hooks to secure the vehicle to the tray.
- Do not attach towing equipment to the bumpers or brackets, suspension or cross members.
- To prevent damage, use only proper towing equipment.

Using a flat-bed tow truck

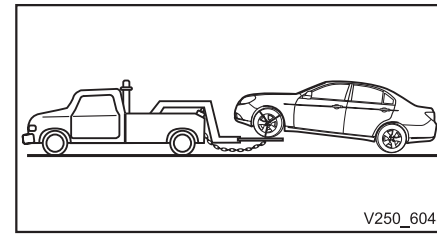
A flat-bed tow truck is the best method of towing the vehicle to avoid damage.

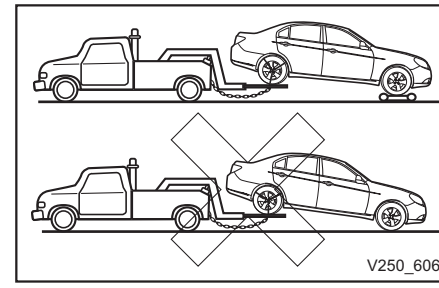

V250_6063

Using a standard tow truck

If a flat-bed tow truck is not available a standard tow truck can be used.

WARNING
- If your vehicle must be towed from the rear, use a towing dolly under the front wheels.
- Never tow your vehicle from the rear with the front wheels on the road.
- If the vehicle is towed with the front wheels contacting the road, the vehicles drive system could be severely damaged.


V250_6048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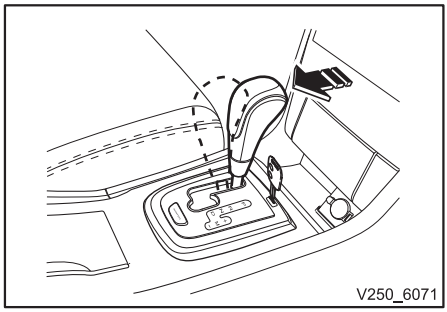
TOWING A DISABLED VEHICLE cont.

Shift lock control system (automatic transmission)



Your vehicle has a Brake-Transmission Shift Interlock (BTSI) system. Before shifting from **P** (park), the ignition must be in the **ON** position and the brake pedal must be applied.

If the system does not respond to the above procedure and the shift lever can not be moved, use the following procedure:

1. Switch off the ignition and remove the key.
2. Apply and hold the brake pedal.
3. Remove the cap from the transmission shift lock slot.
4. Insert and press the ignition key into the transmission shift lock slot.
5. Shift the gear lever to **N** (neutral).
6. Remove the key from the slot.
7. Reinstall the cap.
8. Start the engine and shift the transmission into the desired position.
9. Refer to your Holden Dealer as soon as possible.

Note

- If the shift lever is returned to the **P** (park) position, the above procedure will need to be repeated to shift the lever into **N** (neutral).
- The above procedure will need to be carried out if the vehicle has a flat battery and requires towing.
- Refer to *Towing a disabled vehicle* previously in this chapter.

ENGINE OVERHEATING

WARNING
Immediate action is required if the engine overheats. This is indicated by one or more of the following:

- The temperature gauge needle moving over to the **H**.
- The engine coolant temperature lamp (diesel only) illuminates.
- Steam escaping from under the bonnet.
- A loss of power.
- A loud knocking or pinging noise.

Continued driving EVEN FOR A SHORT TIME will cause engine damage. Stop the vehicle as soon as it is safe to do so and perform the following checks.

Leave the engine idling, ensure that the park brake is applied and the transmission selector lever is in **P** (park). Exit the vehicle and audibly check that the cooling fan is working.

WARNING

- Do not open the bonnet if you can see or hear steam or coolant escaping from the engine compartment. Scalding fluid and steam can be blown out under pressure which could cause serious burns. Wait until no steam or coolant can be seen or heard before opening the bonnet.
- Do not remove the radiator cap if the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure which could cause serious burns.
- Do not place hands near under bonnet components as the cooling fan may start working unexpectedly even when the engine is not running and the ignition is switched off.

If the fan is working and the temperature gauge needle has not returned to its normal position within a few minutes, STOP the engine and remove the ignition key. Look for leaks at the radiator hoses and connections, heater hoses and connections, radiator and water pump. Take care when checking these areas as they will be hot. If you find a major leak or other problems that may have caused the engine to overheat, do not run the engine until these problems have been corrected.

Check the air intake area in the front bumper to ensure that it is clear of leaves and road grime. Refer to *Exterior checks* in chapter 7.

If you do not find anything wrong, you should check the engine coolant level at the coolant reservoir. Refer to *Under bonnet checks* in chapter 7.

ENGINE OVERHEATING cont.

If you see or hear steam coming from the engine, stop and switch the engine off. Do not open the bonnet until the engine has cooled down.

If the temperature gauge is high with no sign of steam:

1. Pull over and stop the vehicle as soon as it is safe to do so.
2. Switch off your air conditioner.
3. Run the engine at idle speed for about 3 minutes.
   The engine cooling fan should be running.

If the fan is not operating and steam is visible:

1. Switch off the engine.
2. Move away from the vehicle without opening the bonnet.
3. Let the engine cool down.
4. When steam is no longer visible, carefully open the bonnet.
5. Have the vehicle serviced as soon as possible.

If the fan is operating with no sign of steam:

1. Open the bonnet.
2. Let the engine idle until it is cool.
3. Check the coolant level.

If the fan is operating but the engine temperature does not fall:

1. Switch off the engine.
2. Open the bonnet.
3. Let the engine cool down.
4. Check the coolant level.

If the coolant level is low, there may be a leak in the cooling system:

Check for leaks in the following areas:

1. Radiator.
2. Radiator hoses.
3. Radiator connections.
4. Heater hoses.
5. Heater hose connections.
6. Water pump.

WARNING
Do not remove the cooling system cap if the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure which could cause serious burns.

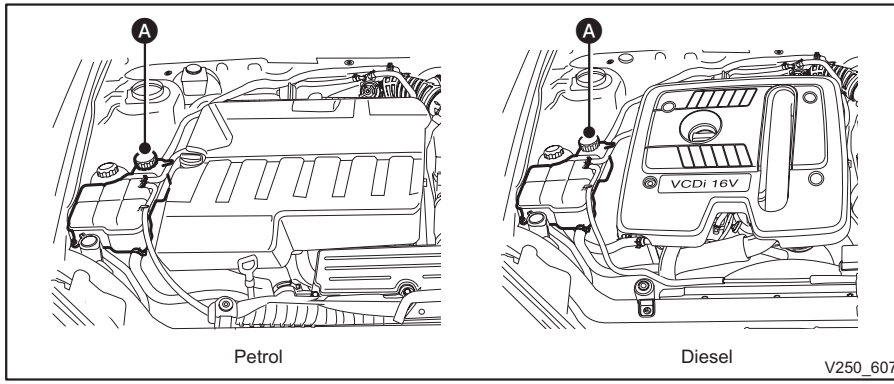
ENGINE OVERHEATING cont.

WARNING
- The cooling system is pressurised, so to avoid injury please read all of the following instructions before attempting to add coolant.
- Do not spill coolant on the vehicle's exterior surfaces as it can damage the paintwork. If you do, wash it off immediately.

Without undoing the coolant reservoir cap, look at the level of the coolant in the see-through coolant reservoir Ⓐ.

When the engine is hot the level should be above the **MIN** mark.

If the level is at or below the **MIN** mark when the engine is hot, coolant will need to be added as follows:



- Allow the engine to cool down.
- The coolant reservoir is pressurised, so cover the cap Ⓐ with a thick cloth. Remove the cap very slowly to allow any pressure to escape.
- If required, top up the coolant reservoir with coolant of the correct specification. Refer to *Specifications* in chapter 8.
- Top up the coolant reservoir to the **MAX** mark while the engine is idling.
- Replace the coolant reservoir cap.

If after taking one or more of the above actions the temperature gauge no longer indicates an overheat condition you can resume driving at a reduced speed. Return to normal driving after 10 minutes if the temperature gauge does not again show an overheat condition. If overheating occurs again you should have the vehicle attended to, as soon as possible, by your Holden Dealer.

The engine may temporarily operate at high temperatures during demanding operating conditions, especially on hot days, including:
- Climbing a long hill.
- Stopping immediately after high speed driving.
- Idling for long periods in traffic.
- Towing a heavily laden trailer.

Note It may help to switch off the air conditioner in these conditions.

Refer to *Engine coolant level* in chapter 7, for instructions to help protect your cooling system from overheating.

FLAT BATTERY

JUMP STARTING

Please read the following warnings and procedure in full before attempting to jump start the vehicle.

If, after reading the following procedure, you are still unsure about 'jump starting', Holden strongly recommends for your safety and that of the vehicle that you seek the assistance of a suitably trained service technician.

WARNING

Do not push start or tow start the vehicle. If unburnt fuel were to reach the catalytic converter and ignite, the converter could overheat or be destroyed by backfire. Therefore, if the battery is flat, jump start, but do not push start the vehicle.

Batteries produce explosive gases, contain corrosive acids and supply levels of electrical current high enough to cause burns. Therefore, adhere to the following when working near a battery:

- Do not let the jumper lead clamps touch each other or other metal parts.
- Do not allow the jumper leads to contact any rotating engine components.
- Do not use open flames or sparks near the battery.
- Do not smoke near the battery.
- Never use a quick charger to start the engine.
- The battery must be removed from the vehicle for recharging.
- Wear eye protection such as safety glasses and avoid leaning over the battery.
- Battery acid is corrosive. If it gets on your skin, wash with plenty of water immediately. If it gets in your eyes you should not only flush with lots of water, but should also seek medical help. Battery acid also damages paint and fabrics. To minimise damage, wash it off immediately.
- Remove rings, metal watch bands and other metal jewellery before working around the battery.
- If a permanently connected hands free telephone kit is fitted to the vehicle, remove the fuse for the telephone kit before jump starting. Remember to replace the fuse afterwards.

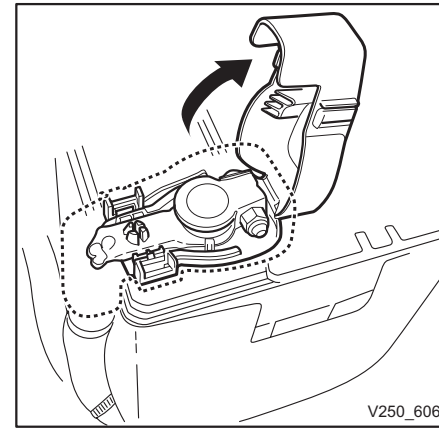
FLAT BATTERY cont.

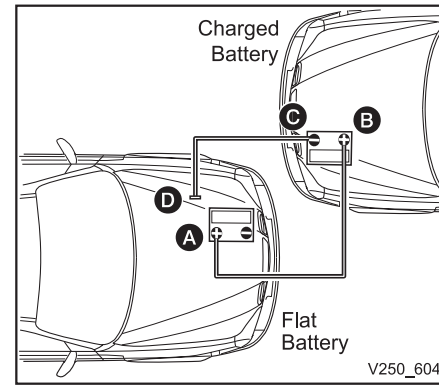
Jump starting procedure

Note The battery in both vehicles must have a negative earth and a 12 volt rating.

1. Position the two vehicles so that they are NOT touching.
2. Apply the park brakes.
3. Put the transmission selector lever in **P** (park) .
4. Switch the ignition to **LOCK** and turn off all lights and accessories in both vehicles, except the hazard warning flashers or any lights needed for the work area.
5. Open both terminal covers on the battery as shown.
6. Attach one end of the RED jumper lead to the positive battery terminal Ⓐ of the flat battery.
7. Attach the other end of the RED jumper lead to the positive terminal Ⓑ of the charged battery.
8. Attach one end of the BLACK jumper lead to the negative terminal Ⓒ of the charged battery.
9. Attach the other end of the BLACK jumper lead to a suitable ground Ⓓ, such as a steel bracket bolted to the engine block on the vehicle with the flat battery.
10. Start the engine in the vehicle with the charged battery and run the engine at idle speed for at least 4 minutes.
11. Start the engine of the vehicle with the flat battery.
12. Turn on the headlamps, rear demister, air conditioning and audio system of the vehicle with the flat battery.

    Note Turning on the electrical accessories helps protect the electrical systems in the vehicle.
13. Allow both cars to run for at least 4 minutes still connected, to stabilise battery voltage.
14. Leave the engines running while removing the BLACK negative jumper lead at position Ⓓ first, followed by the RED positive jumper lead.





Note

- While removing each clamp, take care that it does not touch any other metal while the other end remains attached.
- Ensure both battery terminal covers are folded back into place.

DIESEL FUEL FILTER*

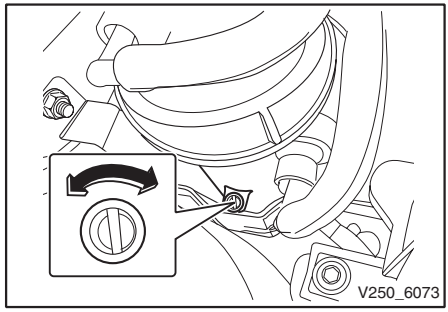
DIESEL FUEL FILTER WATER DRAINING

When the water level in fuel filter is excessive, the water in fuel filter warning lamp comes on. When this occurs, immediately drain the water from fuel filter.

WARNING
The engine and fuel system may be seriously damaged if you keep driving while the warning lamp is illuminated. Drain the fuel filter or contact your Holden Dealer as soon as possible.

1. Locate the fuel filter in the engine compartment and place a suitable container under it.
2. Turn the drain plug located in the left area of the fuel filter anticlockwise using a flat-blade screwdriver.
3. Wait until the fuel filter is completely drained of water, then turn the drain plug clockwise to tighten it.
4. Before starting the engine, perform the bleeding operation. Refer to *Diesel fuel system bleeding* below.

   Note The vehicle's fuel filter will be drained when the vehicle is serviced as per the Service/warranty booklet.



DIESEL FUEL SYSTEM BLEEDING

Perform the bleeding operation:

- If the vehicle has run out of fuel.
- After draining water from the fuel filter.

Note

- A minimum of 10 L of diesel fuel must be in the tank for the bleeding operation to work correctly.
- It is possible to restart the engine if the tank has been run dry. A delayed start is to be expected.

1. Switch the ignition to the **ON** position for approximately 5 seconds, then to the **LOCK** position.
2. Repeat step 1 five times.
3. Attempt to start the engine for approximately 40 seconds. If the engine does not start, wait at least 5 minutes and try again.

   Note If the engine still does not start, contact your Holden Dealer.

FUSE REPLACEMENT

WARNING
Switch off the ignition and any electrical equipment before changing a fuse.

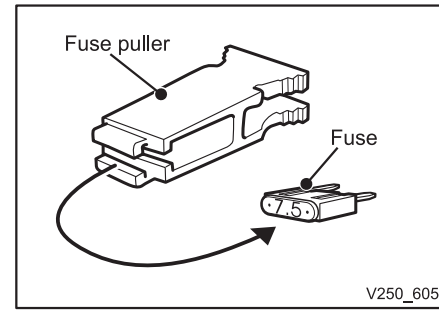
A fuse puller is provided in the engine compartment fuse panel, which can be used on each of the 2 fuse panels.

Always replace a blown fuse with one of the same amperage. The amperage is shown on the fuse's head:

Spare fuses of various ratings are provided in the cabin and engine compartment fuse panels.

Note If a fuse blows, this indicates a fault. The cause should be promptly located and fixed.

Make sure that each fuse cover is securely in place after use.



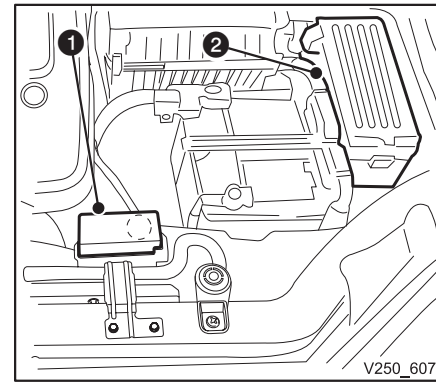
WARNING
- When replacing a fuse be sure to use a fuse of the specified amperage.
- Never install a wire or similar as it could damage electrical components and cause a fire.
- Any improper alterations to the electrical system may cause a fire hazard and engine damage. To maintain your own safety and that of the vehicle, have any work involving the electrical system or the replacement of high current fuses or relays carried out by your Holden Dealer.

FUSE REPLACEMENT cont.

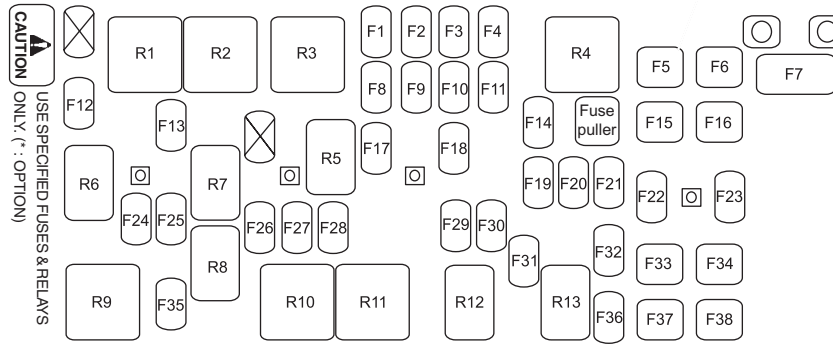
ENGINE COMPARTMENT FUSES AND RELAYS

❶ Auxiliary fuse/relay box (diesel only). Remove clip on the cover to gain access.

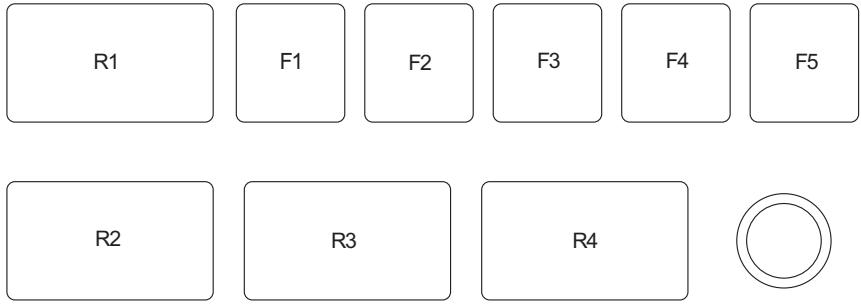
❷ Main fuse/relay box. Remove the clip-on cover to gain access.



Main fuse/relay box



Auxiliary fuse box



FUSE REPLACEMENT cont.

ENGINE COMPARTMENT INDEX

Main fuse/relays

Fuses:

F1 - ECM ..... (15A)
F2 - PWR SEAT ..... (30A)
F3 - LCM ..... (15A)
F4 - DRIVER'S PWR WIDW ..... (20A)
F5 - PASSENGER'S PWR WIDW ..... (20A)
F6 - HVAC BLWR ..... (30A)
F7 - ALTERNATOR ..... (120A)
F8 - IGN COIL ..... (20A)
F9 - FUEL ..... (20A)
F10 - IP FUSE ..... (25A)
F11 - PWR MIRROR ..... (10A)
F12 - A/C CMPRSR ..... (10A)
F13 - FRT FOG ..... (15A)
F14 - S/ROOF ..... (20A)
F15 - COOL FAN HI
PETROL ENGINE ..... (30A)
DIESEL ENGINE ..... (40A)
F16 - BCM BATT ..... (60A)
F17 - HORN ..... (15A)
F18 - STOP LAMPS ..... (20A)
F19 - ABS ..... (15A)
F20 - ABS WARNING ..... (10A)
F21 - SPARE ..... (20A)
F22 - SPARE ..... (10A)
F23 - SPARE ..... (15A)
F24 - LOW BEAM RT ..... (10A)
F25 - LOW BEAM LT ..... (10A)
F26 - ENG1 ..... (15A)
F27 - ENG3 ..... (20A)
F28 - ENG2 ..... (15A)
F29 - ILLUM RT ..... (10A)
F30 - ILLUM RT ..... (10A)
F31 - HI BEAM ..... (15A)
F32 - SPARE ..... (25A)
F33 - COOL FAN LOW
PETROL ENGINE ..... (20A)
DIESEL ENGINE ..... (40A)
F34 - ABS ..... (60A)
F35 - PWR AMP ..... (15A)
F36 - SPARE ..... (30A)
F37 - ST/IG2 ..... (30A)
F38 - IGN 1 ..... (30A)

Relays:

R1 - COOL FAN CNTRL RELAY
R2 - COOL FAN HI RELAY
R3 - FUEL PUMP RELAY
R4 - PWR WNDW RELAY
R5 - HORN RELAY
R6 - A/C CMPRSR RELAY
R7 - FRT FOG RELAY
R8 - HEAD LAMP LO RELAY
R9 - COOL FAN LOW RELAY
R10 - ENG MAIN RELAY
R11 - STARTER RELAY
R12 - ILLUM LAMPS RELAY
R13 - HEAD LAMP HI RELAY

Auxiliary engine compartment fuses and relays (diesel only)

Fuses:

F1 - PTC3 ..... (40A)
F2 - PTC2 ..... (40A)
F3 - PTC1 ..... (40A)
F4 - F/F HTR ..... (30A)
F5 - GPCU ..... (60A)

Relays:

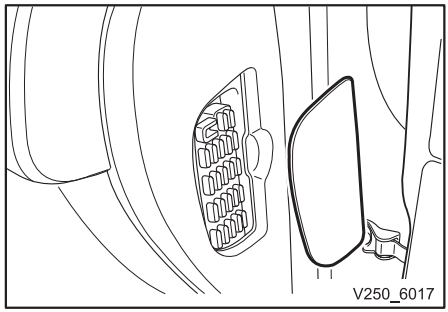
R1 - PTC3
R2 - PTC2
R3 - PTC1
R4 - F/F HTR

FUSE REPLACEMENT cont.

CABIN FUSES AND RELAYS

The fuse panel is located in the right hand side dashboard.

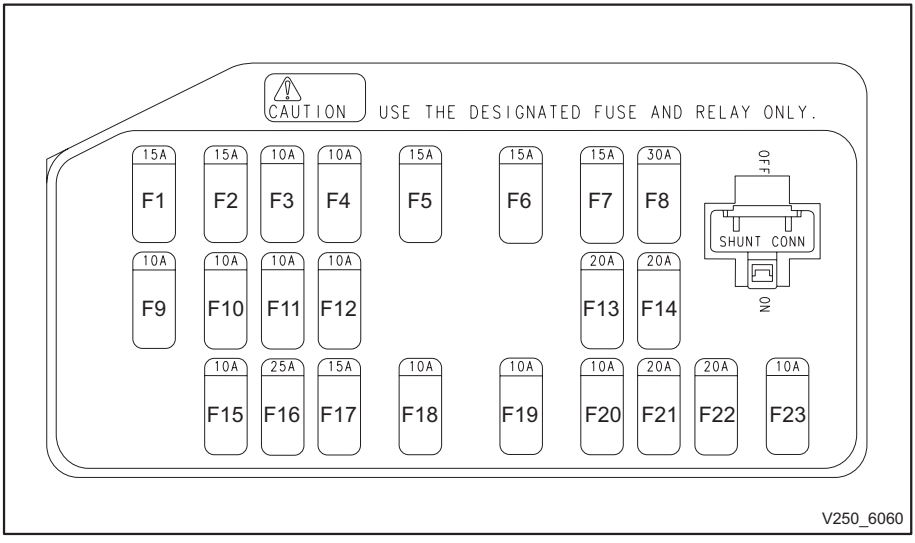
Use the slot on the forward edge of the fuse panel cover to pull open.



Cabin fuse and relay index

Fuses:

F1 - B/UP LP.....(15A)
F2 - U/H J/B.....(15A)
F3 - ISU .....(10A)
F4 - OSRVM .....(10A)
F5 - A/D CONVERTER.....(15A)
F6 - SSPS.....(15A)
F7 - ALDL .....(15A)
F8 - ESP® .....(30A)
F9 - SDM .....(10A)
F10 - AIR BAG.....(10A)
F11 - SPARE
F12 - LCM.....(10A)
F13 - CIGAR.....(20A)
F14 - SUB WOOFER.....(20A)
F15 - CLUSTER 2 .....(10A)
F16 - WIPER .....(25A)
F17 - ECU.....(15A)
F18 - HVAC .....(10A)
F19 - CLOCK.....(10A)
F20 - RADIO.....(10A)
F21 - HEATING MAT .....(20A)
F22 - AUDIO.....(20A)
F23 - CLUSTER 1 .....(10A)



BULB REPLACEMENT

Note If unsure of the bulb replacement process for any of the lamps, please have the work carried out by a suitably trained service technician.

NOTES WHEN REPLACING BULBS

- Switch the ignition **OFF** and remove the keys.
- Switch off the related switch.
- It is important to fit only bulbs of the specified wattage.
- Do not touch bulbs or reflectors with bare hands. Greasy fingers cause stains which evaporate, eventually resulting in a dull reflector. Grease spots on Halogen bulbs will, within a short time, lead to bulb failure. Clean stained bulbs with methylated spirits.

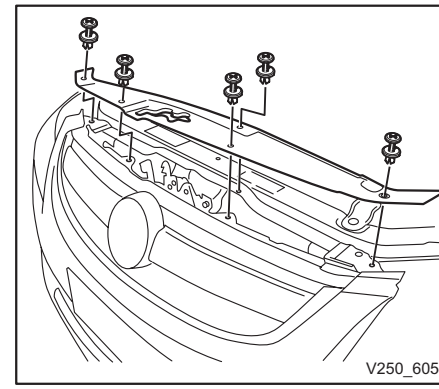
BULBS TO BE CHANGED BY A HOLDEN DEALER

- Front fog lamps*.
- Instrument panel lamps.
- Side turn signal lamps (in exterior mirrors).
- Reverse lamps.
- High mounted stop lamp.
- Glovebox lamp.

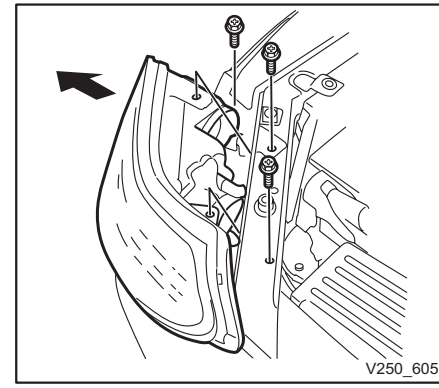
FRONT LAMPS

To gain access to the front park bulbs, front turn signal bulbs and high and low beam headlamp bulbs:

1. Open the bonnet, remove the 5 scrivets and the upper facia panel.


V250_6054

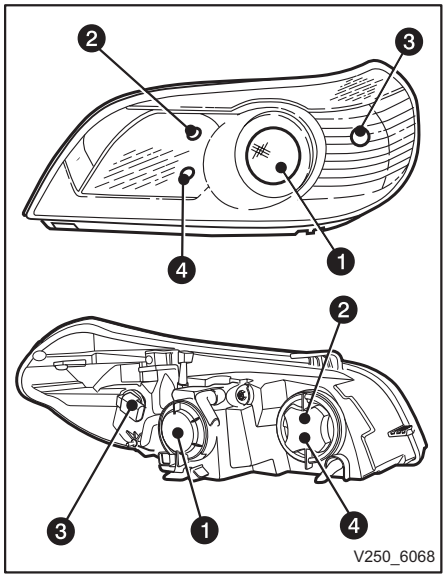
2. Remove the 3 bolts from the headlamp assembly.
3. Remove the headlamp assembly by pulling it towards the front of the vehicle.
4. Disconnect the two wiring connectors.


V250_6055

BULB REPLACEMENT cont.

Headlamps

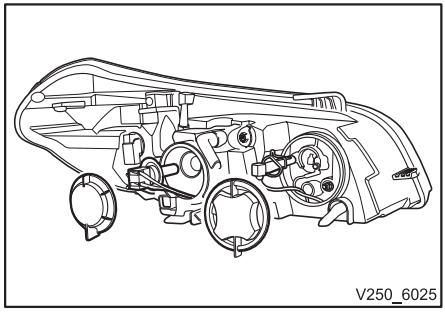
❶ = Low beam (55W)
❷ = High beam (55W)
❸ = Turn signal (PY21 amber)
❹ = Park lamp (W5W wedge)



Headlamps, low and high beam (55W)

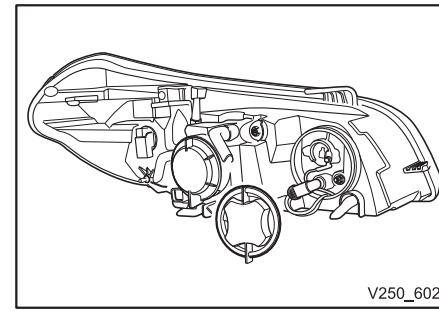
1. Follow the steps described in section *Front lamps* previously in this chapter, to gain access to the lamp assembly.
2. Turn the relevant dust cap anti-clockwise and remove.
3. Pull to remove the wiring harness connector from the rear of the bulb.
4. Press and unclip the bulb spring retainer and pivot clear of the bulb.

   Note Check the orientation of the bulb tang for replacement.
5. Remove the bulb from the headlamp.
6. Fit the new bulb into the headlamp ensuring the tang is located correctly.
7. Refit the bulb spring retainer into its original position.
8. Install the wiring harness connector and dust cap (ensuring the rubber seal is in place).
9. Install components removed in step 1. Refer to *Front lamps* previously in this chapter.
10. Check lamp operation.



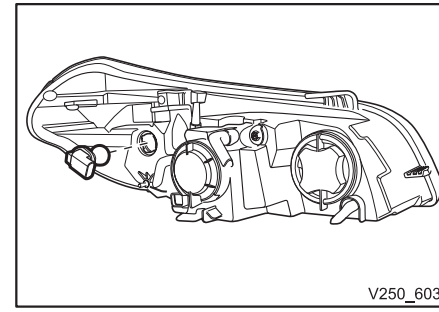
BULB REPLACEMENT cont.

Front park lamps



1. Follow the steps described in section *Front lamps* previously in this chapter to gain access to the lamp assembly.
2. Remove the inboard high beam dust cover to access the bulb.
3. Remove the park lamp bulb holder by pulling it straight out.
4. Remove the park lamp bulb by pulling it straight out of the holder.
5. Insert the new bulb into the holder, then install the holder. Replace the low beam bulb dust cap (ensuring the rubber seal is in place).
6. Install components removed in step 1. Refer to *Front lamps* previously in this chapter.
7. Check lamp operation.

Front turn signal



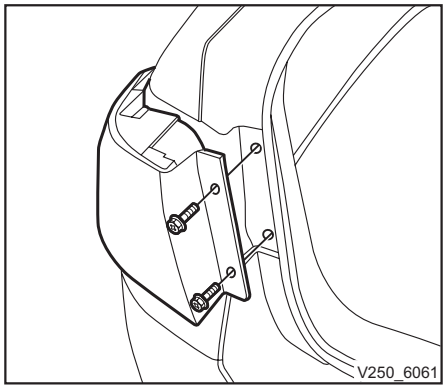
1. Follow the steps described in section *Front lamps* previously in this chapter to gain access to the lamp assembly.
2. Turn the bulb holder anticlockwise and remove.
3. Lightly press the bulb and twist anticlockwise out of the holder.
4. Insert the new bulb and install the bulb holder. Ensure that the same colour bulb is used.
5. Install components removed in step 1. Refer to *Front lamps* previously in this chapter.
6. Check lamp operation.

BULB REPLACEMENT cont.

REAR LAMPS

To gain access to the rear turn signal and stop/tail bulbs:

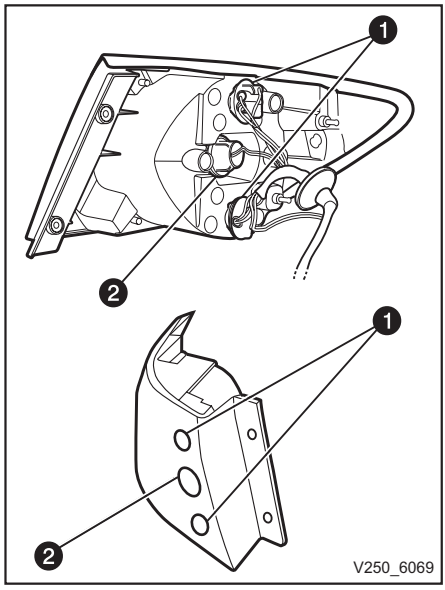
1. Open the boot.
2. Remove the 2 bolts on the inner side of the lamp.
3. Remove the lamp by pulling directly rearwards of the vehicle.



Rear lamps

❶ = Stop/tail (21/5W)

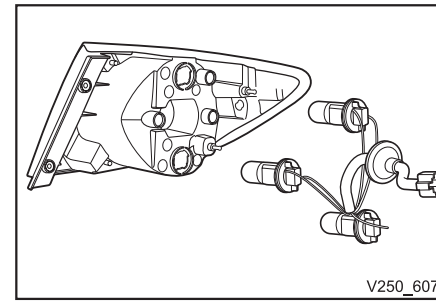
❷ = Turn signal (21W amber)



BULB REPLACEMENT cont.

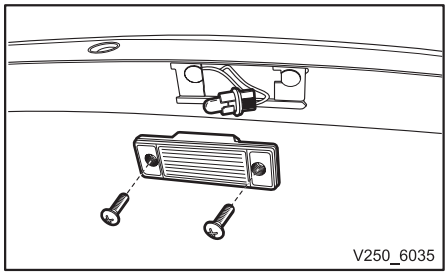
Rear turn signal, stop and tail lamps

1. Follow the steps described in section *Rear lamps* previously in this chapter to gain access to the lamp assembly.
2. From the rear of the assembly, turn the bulb holder of the bulb that needs replacing anticlockwise to remove it from its housing.
3. Lightly press the bulb and twist it anticlockwise out of the holder.
4. Install the new bulb into the bulb holder by pushing it into the holder and turning it clockwise. Ensure that the same colour bulb is used.
5. Install the bulb holder into the lamp.
6. Install the components removed in step 1. Refer to *Rear lamps* previously in this chapter.
7. Check lamp operation.



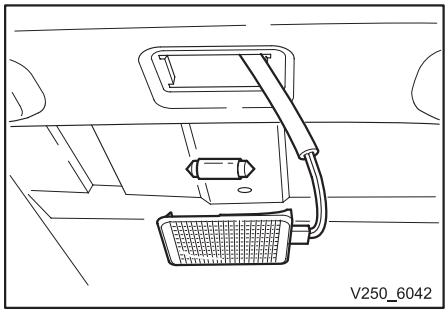
BULB REPLACEMENT cont.

NUMBER PLATE LAMP (5W BULB)



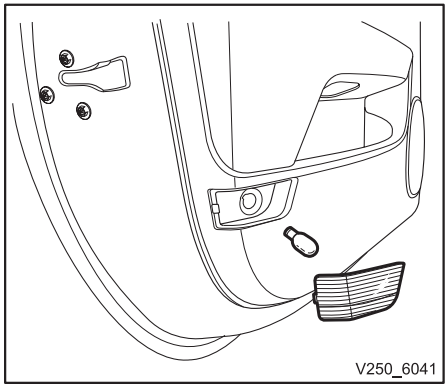
1. Using a Phillips head screwdriver, remove the 2 screws and the lens housing at the lower edge of the boot lid.
2. Remove the bulb holder from the lamp housing by rotating the bulb holder anticlockwise. Pull the bulb out of the bulb holder.
3. Push the new bulb into the bulb holder. Install the bulb holder into the lamp housing by rotating the bulb holder clockwise.
4. Replace the lamp cover and screws.
5. Check lamp operation.

BOOT LAMP (10W BULB)



1. Gently prise away the lamp assembly with a fine flat-bladed screwdriver.
2. Remove the bulb.
3. Refit the new bulb.
4. Refit the lamp assembly.
5. Check lamp operation.

DOOR COURTESY LAMPS (5W BULB)

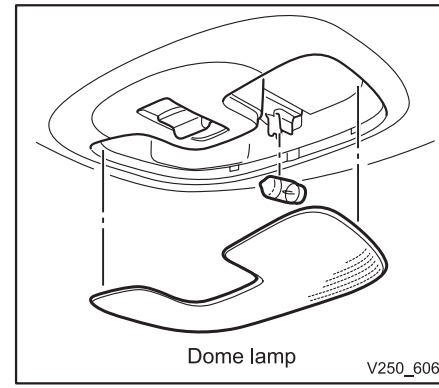


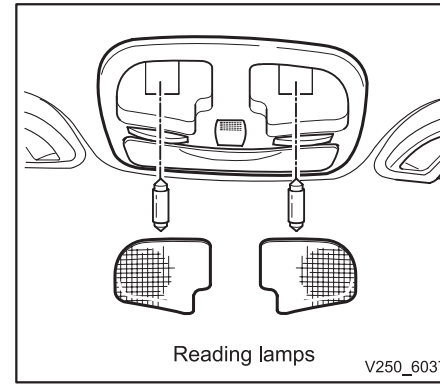
1. Gently prise away the lens housing with a fine flat-bladed screwdriver.
2. Remove the bulb.
3. Refit the new bulb.
4. Refit the lens housing to the door trim.
5. Check lamp operation.

BULB REPLACEMENT cont.

INTERIOR DOME (10W BULB)
READING LAMPS (8W BULB)

1. Gently prise away the lens housing with a fine flat-bladed screwdriver.
2. Remove the bulb that needs replacing.
3. Refit the new bulb into the lamp.
4. Refit the lens housing. Make sure they are securely locked in place.
5. Check lamp operation.





CHAPTER 7

Weekly checks

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Battery 7-16

*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

EXTERIOR CHECKS

MISCELLANEOUS CHECKS

As well as taking the vehicle to be serviced, there are a few simple, weekly checks that the owner/operator is recommended to make. These are shown on the following pages.

WARNING

- If the engine temperature is high, the cooling fan may remain on for several minutes after switching off the ignition. Therefore, the engine cooling fan can start working unexpectedly, even when the engine is not running and the ignition is off.
- Electronic ignition systems have a high ignition power. Do not touch the ignition system; this could be highly dangerous.

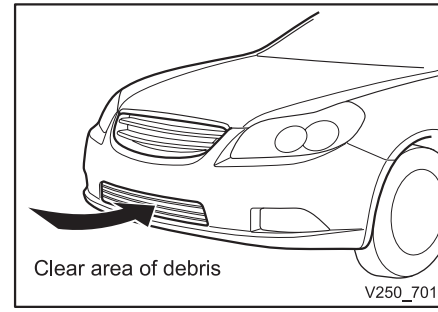
Perform the following checks regularly to ensure a minimum level of safety is maintained.

Check that:

- all exterior lamps are working and that their appropriate indicator lamps on the instrument panel illuminate.
- mirrors and glass are clean and not scratched.
- the automatic transmission gear selector indicator correctly lines up next to the gear selected.
- the demister operates.
- the horn works.
- all seatbelts are in good condition and operate correctly.
- the seatbelt buckles are clean and operate correctly. Remember that seatbelts must never be worn twisted.

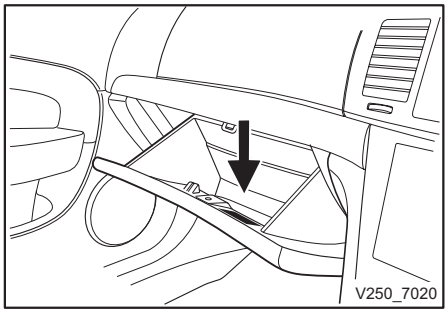
Note Check the air intake area in the front bumper for the build-up of leaves and road grime. Any build-up can impair the engine cooling efficiency of the vehicle.

Clear this area of debris whenever the vehicle is washed.



EXTERIOR CHECKS cont.

TYRES



Air pressure

Weekly checking of the air pressure in the tyres (including the spare) ensures your safety, as well as reducing fuel consumption and increasing the life of the tyres.

For constant long distance or rough road driving, daily checking is recommended.

The correct pressure for the tyres is shown on the tyre placard on the glovebox lid.

Increase the inflation pressure in the tyres according to the load on the vehicle.

If the vehicle is heavily loaded, the recommended pressure for the tyres is increased (refer to the tyre placard). Because the tyres are operating under a greater load, the weekly air pressure check becomes even more important.

Therefore, if the vehicle is loaded to half the maximum load, then the tyres should be inflated half way between the minimum and maximum pressures given on the tyre placard. Refer to *Loading the vehicle* in chapter 9.

Tyre inflation pressure increases when the tyres have been driven more than 2 km. Therefore, the pressure should be checked when the vehicle has been stationary for over 3 hours. If they must be checked immediately after driving, increase the pressure shown on the placard by 10 %.

Always use a tyre pressure gauge to check the tyres; simply looking at the tyres is not sufficient. If the pressure is too low, this can result in considerable tyre warm-up and internal damage, leading to tread separation and even to tyre blowout at high speeds.

If the pressure is too high, this can result in reduced traction, harsh vehicle ride, increased risk of tyre blowout and poor tyre wear.

Remember to replace any valve dust caps or extensions, as this stops dirt and moisture from fouling the valves.

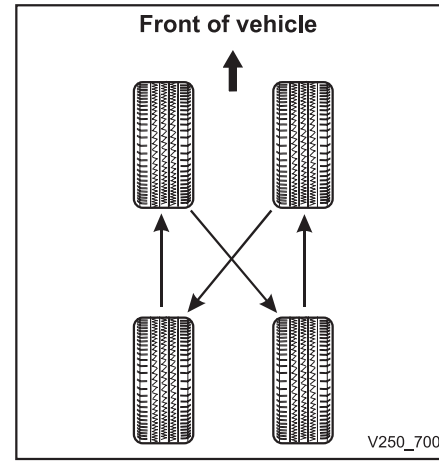
When checking the tyre air pressure, take a look at the condition of the tyre tread and inspect for stones or abnormal wear.

EXTERIOR CHECKS cont.

Tyre rotation

Front and rear tyres perform different jobs and can wear differently depending on factors such as:

- the types of roads driven on,
- driving habits,
- tyre pressures,
- wheel alignment and balance.
- Tyre condition is checked when the vehicle is serviced by a Holden Dealer. They are able to diagnose any unusual signs of wear. If the tyres are rotated, it is recommended that the balance be checked at the same time.



Alignment and balance

Improper wheel alignment can cause the tyres to wear faster and unevenly. It can also cause the vehicle to pull to one side.

Out-of-balance wheels and tyres can cause annoying vibration and uneven tyre wear. If you suspect any of these problems exist, have a wheel alignment and balance check, carried out by your Holden Dealer.

Replacement and repair

Replacing the factory fitted wheels and tyres with non-genuine wheels and tyres may affect the New Vehicle Warranty as well as the vehicle's insurance policy. Refer to the tyre placard on the vehicle for tyre size and load rating. Using a different size or type of tyre may affect such things as:

- ride,
- handling,
- speedometer,
- vehicle ground clearance,
- tyre clearance,
- snow chain clearance,
- ABS (Anti-lock Brake System),
- ESP® (Electronic Stability Program).

Take care when using tyres with heavy treads, including tyres made for better grip in the wet. At sustained high speeds, this type of tyre runs at higher temperatures than standard tyres. Only operate them within the limits recommended by the manufacturer. Any doubts about the tyres on the vehicle should be referred to your Holden Dealer.

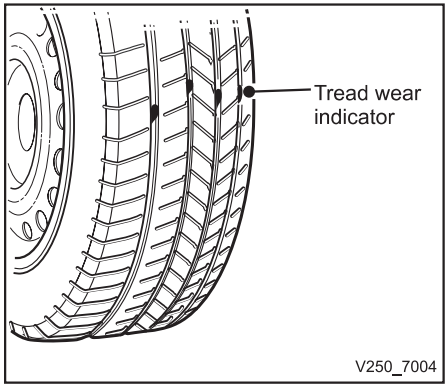
EXTERIOR CHECKS cont.

Tyres with a higher speed or load rating are acceptable, provided they are fitted to a suitable rim size.

Note New tyres should be fitted in pairs to the front. If replacing only one tyre, it should be paired on the same axle with the least worn of the other three.

Replace the tyres when:

- they are worn to the point where the tread indicators appear. The tyres originally fitted to the vehicle have built-in tread indicators. When only 1.5 mm of tread remains, these indicators show as plain bars across the tread pattern at regular intervals around the tyre.
- the tread or sidewall is cut, split, or cracked deep enough to expose the cord or fabric.
- the tyre has a bump or bulge in it, indicating some kind of internal damage.

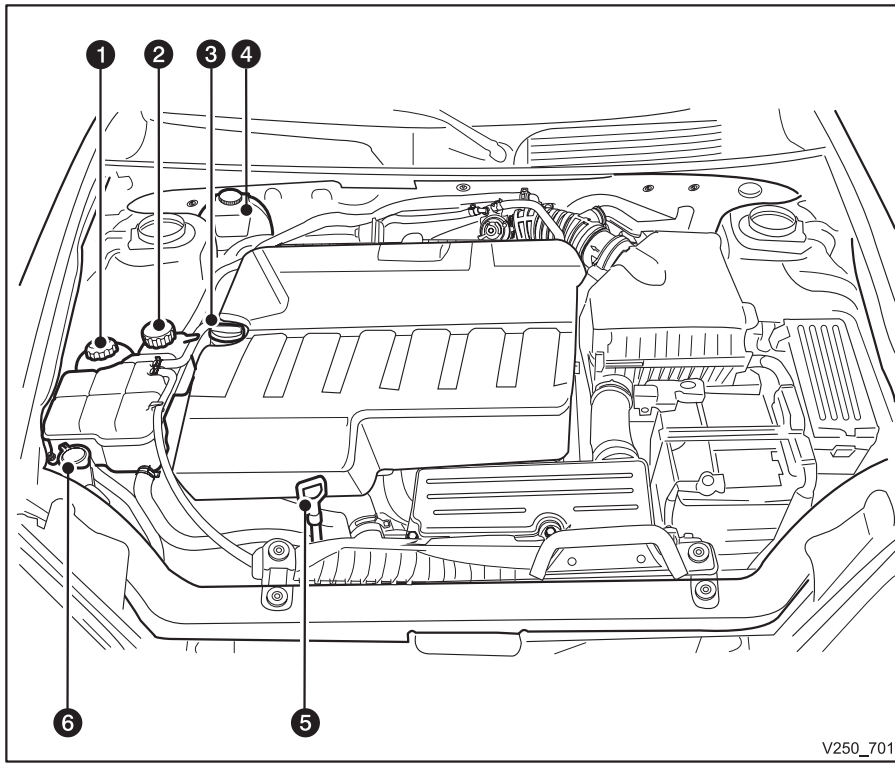


- the tyre has a puncture, cut or other damage which can not be repaired because of the size or location of the damage.
- the cord or fabric is showing.

Do not attempt to drive on a flat tyre more than is necessary to stop safely. Driving even a short distance can damage the tyre and wheel beyond repair. Tyres which have been repaired or retreaded are not capable of being driven safely at high speeds. Therefore, their use is not recommended.

UNDER BONNET CHECKS

UNDER BONNET LAYOUT – PETROL



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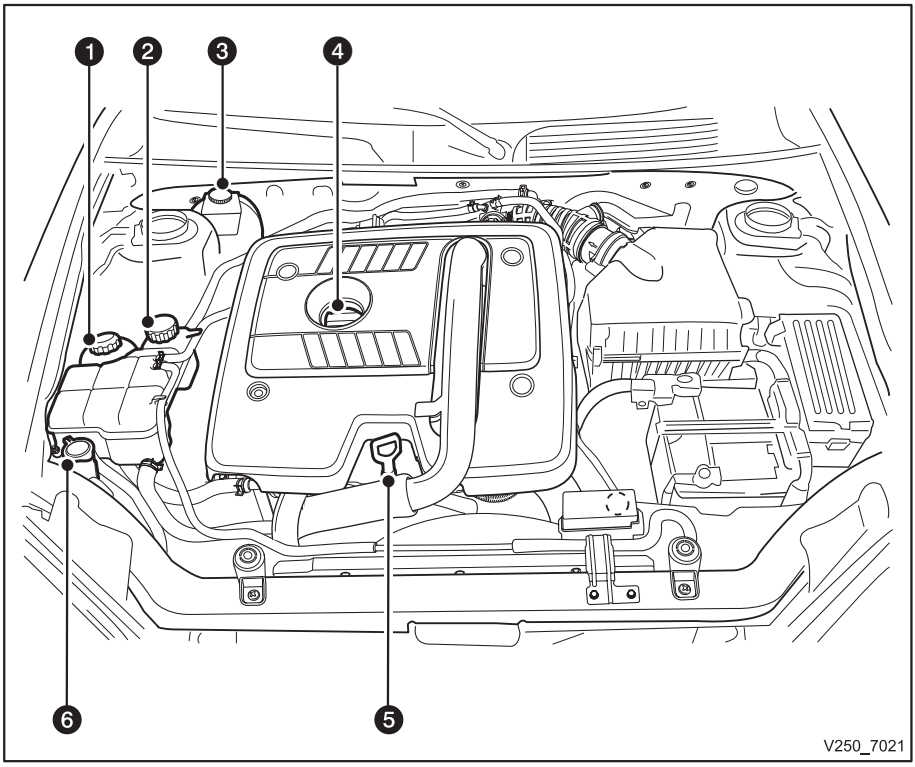
UNDER BONNET CHECKS cont.

UNDER BONNET LAYOUT – DIESEL



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UNDER BONNET CHECKS cont.

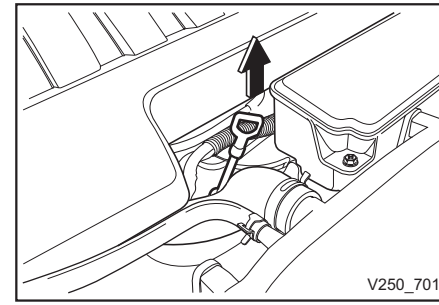
ENGINE OIL

Engine oil level

Check the oil level weekly.

The level is checked with the dipstick. Refer to *Under bonnet layout* previously in this chapter for engine oil dipstick location.

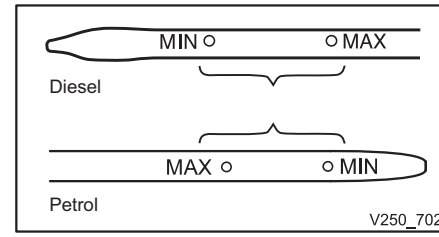
Checking the engine oil level



Check the level when the oil is warm, such as when stopping for fuel.

The vehicle must be on level ground.

1. After switching off the ignition, wait at least 10 minutes for the oil to settle.
2. Remove the dipstick and wipe it clean with a clean cloth or paper towel. Insert the dipstick firmly all the way down, pause for several seconds then withdraw the dipstick and look at the oil level on it.
3. If the level is lower than the **MIN** mark, top up with enough oil to reach the **MAX** mark. Take care not to add too much, as the reading should never be over the **MAX** mark.



Adding engine oil

For engine oil specification, refer to *Specifications* in chapter 8.

1. Turn the engine oil filler cap anticlockwise and remove. Refer to *Under bonnet layout* previously in this chapter for engine oil filler cap location.
2. Pour the required amount of oil into the opening (clean up any spilt oil).
3. Wait a few minutes for the oil to settle, then check the oil level with the dipstick again. If still too low, add more oil.
4. When correct, turn the engine oil filler cap clockwise and make sure its tightly secured. Replace the dipstick.
5. If the oil level is checked when the oil is cold, do not run the engine first. Cold oil does not drain back into the oil pan fast enough to give an accurate reading.

Note Non-detergent and other low quality oils are specifically not recommended. The use of break-in oil, tune up compounds, friction reducing compounds and other supplemental additives are not recommended. Their use increases costs, may be detrimental to the operation of the vehicle and may void the New Vehicle Warranty, to the extent that Holden considers the non-recommended fluid to have affected the specifications or quality of the vehicle.

Engine oil change intervals

Refer to the Service/warranty booklet.

UNDER BONNET CHECKS cont.

Engine oil consumption

Every internal combustion engine uses a certain amount of oil, especially when running in. The engine is dependent on oil for lubricating critical areas, such as the cylinder walls, pistons, rings and valve stems. These parts are all subjected to high friction loads and will prematurely wear out without a constant supply of engine oil. A thin film of oil is left on the cylinder walls, some of which is carried into the combustion chamber and burnt during the combustion process. This also applies to the film of oil on the valve stems which is drawn into the combustion chamber and burnt.

There are several other factors that contribute to the rate of oil consumption in the vehicle's engine:

- Operation of the vehicle:

  High speed driving and heavy towing increases engine temperature, which lowers oil viscosity, causing more oil to reach the combustion chamber and get burnt away. Always check the oil level prior to towing or going on a long trip.

- Quality and grade of oil:

  Oil viscosity is a significant factor in oil consumption. If an oil which is too 'thin' (low viscosity) is used, the oil consumption will increase. Use only the recommended grades of oil.

- Oil level:

  Maintaining a proper oil level is also an important factor in controlling oil consumption. An over-full engine will splash oil onto the cylinder walls in quantities greater than the piston rings can control. This excess oil is drawn into the combustion chamber and burnt, or may result in aeration of oil in the sump causing damage to the engine.

- Dilution:

  When a vehicle is frequently driven on short trips, the engine often fails to reach normal operating temperatures. The oil becomes diluted by fuel and moisture that settles in the oil pan. This may raise the oil level creating a false reading on the oil level dipstick. For example, in a vehicle that has accumulated 1,500 km of short distance or intermittent city operation and has consumed a normal amount of oil, the level may not have dropped from the **MAX** mark, due to dilution. If this vehicle is driven for some distance at highway speeds on a warm day, the dilution elements evaporate lowering the oil level. This sudden change in oil level can give the driver the impression that an excessive amount of oil has been lost in the highway operation.

UNDER BONNET CHECKS cont.

Measuring oil consumption

A simple consumption test can be performed if the driver is concerned by an apparent drop in the oil level.

Add sufficient oil to bring the level up to the **MAX** mark on the dipstick (avoid overfilling). Take note of the odometer reading and check the oil periodically. When the level reaches the **MIN** mark, carefully measure the amount of oil required to return the level back to **MAX** mark and note the odometer reading. The amount of oil added for the kilometres travelled over the duration of the test indicates the oil economy of the engine. Remember to check the oil level at the start and finish of the test on level ground and allow time for oil to drain down (approximately 10 minutes after engine is switched off). Avoid minor top ups (0.25 to 0.5 litre) when measuring oil consumption, as inaccuracies of oil quantity added, may cloud the result.

If, after taking into account the above factors, you are still concerned that your engine has excessive oil consumption then contact your Holden Dealer. Remember that an engine's oil consumption should not be judged until it has run at least 10,000 km.

AUTOMATIC TRANSMISSION FLUID LEVEL

The fluid level for automatic transmission is checked when the vehicle is serviced by your Holden Dealer. Refer to the Service/warranty booklet. The automatic transmission fluid level does not require checking by the driver in between these scheduled services.

UNDER BONNET CHECKS cont.

ENGINE COOLANT

Engine coolant level

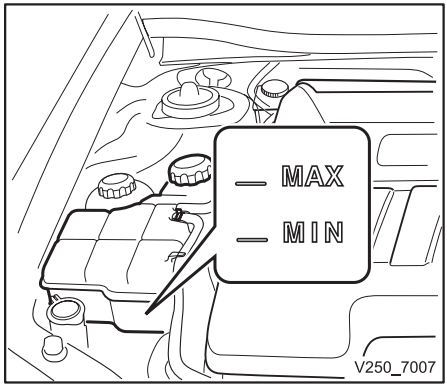
Check the coolant level at least once a week.

The cap for the coolant reservoir is yellow. Refer to *Under bonnet layout* previously in this chapter for coolant reservoir location.

Checking the coolant level

WARNING
Do not remove the coolant reservoir cap if the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure which could cause serious burns.

There are **MAX** and **MIN** markings on the side of the coolant reservoir. When the engine is cold, the coolant level should be at or above the **MIN** mark on the reservoir. After the vehicle has been driven and the engine is at normal operating temperature, the level should be somewhere between half full and the **MAX** mark.



UNDER BONNET CHECKS cont.

Adding coolant

WARNING
- Only use specified coolant. Do not mix different coolants as this may damage your engine cooling system. Refer to *Specifications* in chapter 8 for engine coolant specifications and water-to-coolant ratio.
- Do not spill coolant on the vehicle's exterior surfaces as it can damage the paintwork. If you do, wash it off immediately.

1. Mix a solution of Holden coolant, refer to *Specifications* in chapter 8 and clean fresh water in a container as per the ratio specified.

   Note Failure to use the coolant or maintain the specified concentration may result in voiding the New Vehicle Warranty.
2. Turn the coolant reservoir cap anticlockwise to remove and pour the required amount of fluid into the coolant reservoir.
3. When the level is correct, replace the cap and turn clockwise to secure.

In emergency situations, plain clean fresh water may be used temporarily until the correct Holden coolant is obtained (as soon as possible) from the nearest Holden Dealer.

Note If the coolant requires regular topping up, it could indicate that there is a leak or a fault. Contact your Holden Dealer as soon as possible.

How the engine coolant works

The specified coolant works in three ways:

- It contains special corrosion inhibitors.
- It helps the cooling system in hot weather by increasing the boiling point.
- It protects against freezing down to –37 °C, provided the specified concentration is maintained.

WARNING
Corrosion inhibitors and antifreeze fluids are poisonous. Use extreme care when handling. If swallowed, seek medical attention. Do not remove the coolant reservoir cap if the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure which could cause serious burns.

Refer to *Engine Overheating* in chapter 6 if the engine overheats or loses a lot of coolant.

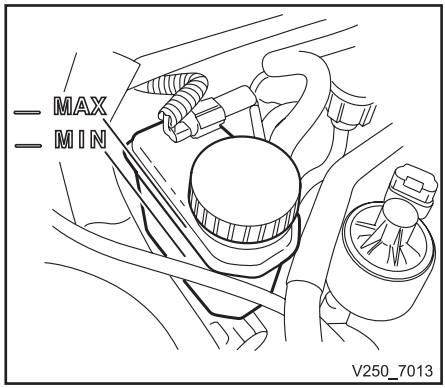
UNDER BONNET CHECKS cont.

BRAKE FLUID

Brake fluid level

WARNING
Brake fluid is poisonous and corrosive and will damage the paint finish of the vehicle if spilt.

Check the brake fluid level in the fluid reservoir weekly.



Checking the brake fluid level

The fluid level is visible through the fluid reservoir. Refer to *Under bonnet layout* previously in this chapter for fluid reservoir location.

Maintain the level between the **MIN** and **MAX** markings.

Note If the fluid is between these levels, do not remove the reservoir cap, as brake fluid exposed to the atmosphere will quickly absorb moisture.

Adding brake fluid

1. Ensure that the ignition is switched off.
2. Wipe the sides of the cap clean and turn anticlockwise to remove.
3. Top up with heavy duty brake fluid which meets Holden specifications. Refer to *Specifications* in chapter 8 for the correct specification.

WARNING
Use only new brake fluid. Use of old, used or inferior brake fluid may endanger the functioning of the brake system.

4. Secure the cap and clean up any spilt fluid.

   Note If the brake fluid reservoir requires constant topping up it could indicate that a fault exists. Contact your Holden Dealer immediately.

UNDER BONNET CHECKS cont.

POWER STEERING FLUID

Power steering fluid level

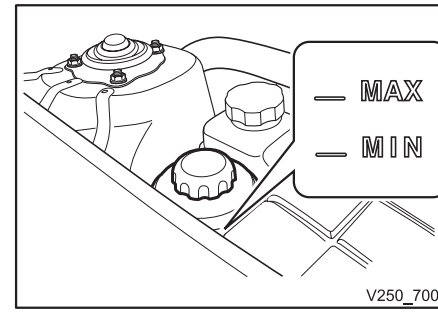
Check the level after the vehicle has been driven for a while (at least 20 minutes) so that the fluid is warm. A convenient time is when stopping for fuel. The cold level check should only be used after the engine has not been running for at least 5 hours. However, the hot level check is always recommended.

Refer to *Under bonnet layout* previously in this chapter for power steering reservoir location.

Checking the power steering fluid level

1. Wipe the sides of the cap clean.
2. Turn the cap anticlockwise until the cap can be lifted off. The **MIN** (cold) and **MAX** (hot) level markings are on the side of the reservoir.
3. When the engine is hot, the level should be at the hot **MAX** level.

   When the engine is cold, the fluid level must be midway between **MIN** and **MAX**.



Adding power steering fluid

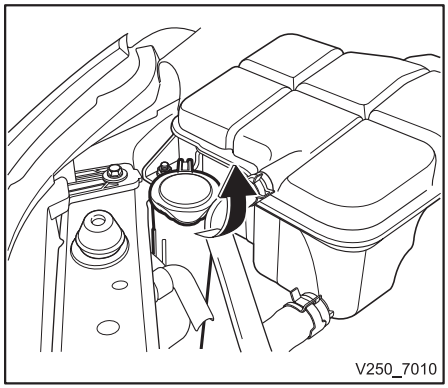
Refer to *Specifications* in chapter 8 for the correct power steering fluid to use.

1. Ensure the ignition is switched off.
2. Top up with power steering fluid which meets Holden specifications. Do not overfill the reservoir.
3. Secure the cap and clean up any spilt fluid.

   Note If the power steering fluid requires constant topping up, it could indicate that a fault exists. Contact your Holden Dealer.

UNDER BONNET CHECKS cont.

WASHER FLUID



Washer fluid level

The washer fluid reservoir has a blue flip top cap. Refer to *Under bonnet layout* previously in this chapter for washer fluid reservoir location.

The container shown supplies water to the front windscreen washers.

Checking the washer fluid level

As washer fluid is constantly used, top up the level weekly.

Adding washer fluid

For a crystal clear windscreen, the correct amount of Holden washer fluid additive can be added. Refer to *Exterior cleaning* in chapter 10.

Note Do not use ordinary soap or detergent as these damage the wiper rubbers.

Make sure the cap is secured.

BATTERY

WARNING

- Batteries emit an explosive gas mixture which may be ignited. Therefore, you should keep sparks and flames away from the battery at all times. Never smoke near a battery.
- Batteries contain sulphuric acid. If acid contacts skin or clothing, flush immediately with plenty of water. In case of eye contact, flush with plenty of water and contact a doctor immediately. Battery acid also damages paint and fabrics. To minimise damage, wash off immediately.
- Take care with all metal objects and tools including items you may wear (for example jewellery, rings and metal watch bands) near battery terminals.
- Do not remove the caps on the top of the battery. The battery supplied in the car is maintenance free and does not require checking or filling.

REPLACEMENT BATTERY

The vehicle's battery is maintenance-free. For battery replacement, refer to your Holden Dealer or authorised repairer.

VEHICLE BATTERY DISCONNECTION

The battery is recharged by the alternator when the engine is running. If the engine is not run for approximately 6 weeks, the battery may discharge, due to the power required by systems such as the security system. If the battery is disconnected it may discharge after approximately 12 weeks.

If the vehicle battery is disconnected when leaving the vehicle for a long period of time, it is recommended that the battery be trickle fed on a battery charger overnight, before installing it back into the vehicle.

For emergency starting when the battery is flat, refer to *Flat battery* in chapter 6.

CHAPTER 8

Specifications

Page

Specifications

2.5 L petrol engine 8-2

2.0 L diesel engine.....8-3

General specifications 8-4

Identification labels.....8-5

*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

SPECIFICATIONS – 2.5 LITRE PETROL ENGINE

Engine type	Inline 6 cylinder DOHC 24 valve
Engine capacity	2492 cc
Engine power and torque	Please refer to holden.com.au
Engine oil specification	SAE 5W-30 or 10W-30 API SL/SM ILSAC GF-3/GF-4 oil
Refill engine oil capacity	6.4 L approximately (including filter)
***Coolant specification**	50% clean fresh water and 50% Dexcool® anti-freeze coolant, conforming to specification number GM6277M
Coolant capacity	8 L approximately
Automatic transmission fluid	Dexron® VI
Brake fluid	Hydraulic Brake Fluid SAE J1704 DOT 4 Grade
Power steering fluid	Dexron® VI
Fuel tank capacity	63 L
Battery	Maintenance free 12 V 610 cold cranking amps (CCA) 66 amp hour
Remote key battery	CR 2032

***WARNING**
Only use specified coolant. Do not mix different coolants as this may damage your engine cooling system.

SPECIFICATIONS – 2.0 LITRE DIESEL ENGINE

Engine type	Inline 4 cylinder SOHC 16 valve
Engine capacity	1991 cc
Engine power and torque	Please refer to holden.com.au
Engine oil specification	0W-40 ACEA C3 or 5W-40 ACEA C3
Refill engine oil capacity	6.2 L approximately (including filter)
***Coolant specification**	50% clean fresh water and 50% Dexcool® anti-freeze coolant, conforming to specification number GM6277M
Coolant capacity	8.45 L approximately
Automatic transmission fluid	Dexron® VI
Brake fluid	Hydraulic Brake Fluid SAE J1704 DOT 4 Grade
Power steering fluid	Dexron® VI
Fuel tank capacity	65 L
Battery	Maintenance free 12 V 610 cold cranking amps (CCA) 66 amp hour
Remote key battery	CR 2032

***WARNING**
Only use specified coolant. Do not mix different coolants as this may damage your engine cooling system.

GENERAL SPECIFICATIONS

DIMENSIONS (MM)

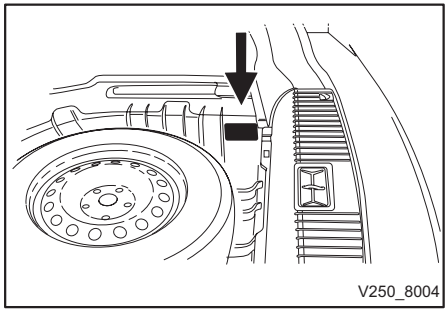
Length	4805
Width - excluding mirrors	1810
Width - including mirrors	2046
Height	1450
Wheel base	2700
Overhang - front	968
Overhang - rear	1136
Front track	1550
Rear track	1545

The above figures are based on the design dimensions.

IDENTIFICATION LABELS

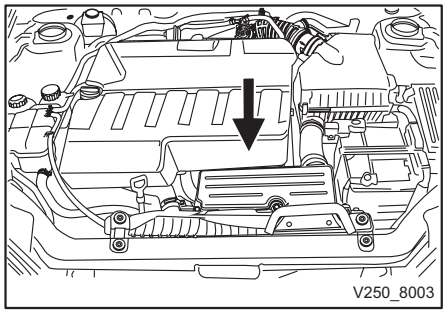
Compliance label

The compliance label is located in the boot under the spare wheel cover on the driver's side. To view the label open the boot and lift the spare wheel cover up by the handle.



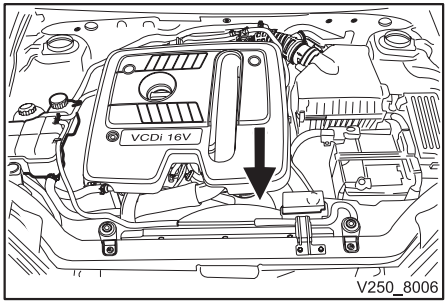
Engine number – petrol

The engine number is stamped onto the engine block under the No. 6 branch of the intake manifold.



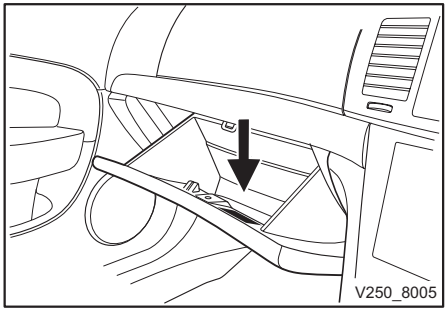
Engine number – diesel

The engine number is stamped onto the engine block under the No. 4 branch of the intake manifold.



Tyre placard

The tyre placard is located inside the glovebox on the lid.

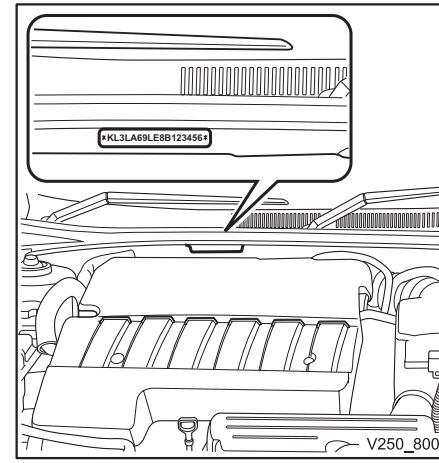


IDENTIFICATION LABELS cont.

Vehicle identification number (VIN)

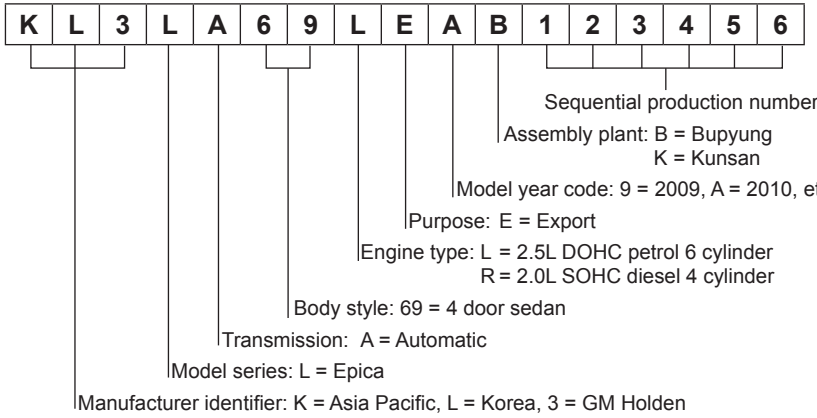
This is the legal identifier for your vehicle, and is used for the identification of spare parts.

The vehicle identification number is located inside the engine bay, on the bulkhead.



Breakdown of vehicle identification number (VIN)

The Vehicle identification number is broken down the following way:


K L 3 L A 6 9 L E A B 1 2 3 4 5 6
Sequential production number
Assembly plant: B = Bupyung
K = Kunsan
Model year code: 9 = 2009, A = 2010, etc
Purpose: E = Export
Engine type: L = 2.5L DOHC petrol 6 cylinder
R = 2.0L SOHC diesel 4 cylinder
Body style: 69 = 4 door sedan
Transmission: A = Automatic
Model series: L = Epica
Manufacturer identifier: K = Asia Pacific, L = Korea, 3 = GM Holden

CHAPTER 9

Tow and load

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Loading the vehicle.....9-2
Towing 9-4

*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

LOADING THE VEHICLE

MAXIMUM VEHICLE PAYLOADS

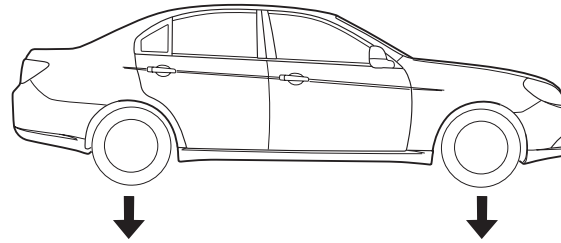
Overloading is a safety hazard and could also shorten the life of the vehicle. The typical recommended carrying capacity of the vehicle is as shown in the table below.

Do not exceed the maximum axle loads shown below in the diagram, including the weight of any options or accessories fitted to the vehicle.

If unsure, the vehicle should be weighed at a weighbridge.

Vehicle	Occupants (at an average of 68 kg each)	Luggage (kg)	Total load (kg)
Sedan	5	68	408

MAXIMUM FRONT AND REAR AXLE LOADS



Vehicle	Rear axle load (kg)	Front axle load (kg)
2.5 L Petrol engine	1020	1060
2.0 L Diesel engine	1005	1105

LOADING THE VEHICLE cont.

NOTES ON LOADING THE VEHICLE

- Place heavy objects in the rear luggage compartment as far forward as possible against the rear seat backrests. When stacking objects, place the heavier objects at the bottom. Unsecured objects in the rear luggage compartment could be thrown forward with great force during heavy braking or in an accident.
- Heavy objects can slip when the vehicle is braking heavily or driven around a bend, and the handling of the vehicle may change.
- Do not place objects in front of the rear window or on the dashboard above the instrument panel. They are reflected in the glass, obstruct the driver's view and may be thrown through the vehicle in the event of heavy braking.
- Do not place objects in the area where the airbags inflate. Objects can cause injury if the airbags are deployed.

CARRYING PORTABLE GAS CYLINDERS IN VEHICLES

WARNING
Gas cylinders can leak, creating a risk of fire or explosion. As a precaution, ensure adequate ventilation when carrying gas cylinders. They must be restrained from rolling around, and where possible, placed in the load area of the vehicle. It is recommended that if gas cylinders are frequently transported, that a purpose-built carrying compartment be used. Transportation of gas cylinders is regulated by legislation in some States.

TOWING

TRAILERS

The word 'trailer' is used throughout this section and is intended to include all types of towed vehicles, such as a caravan, boat trailer or any other special purpose trailer.

TOWING

The vehicle is designed primarily as a passenger vehicle, so handling, durability and economy may be affected by towing a trailer.

Refer to the *Towing equipment* table further on in this chapter for the mandatory equipment required for the weight you are towing. Your Holden Dealer will help supply and install towing equipment to suit your requirements.

OVERLOADING

Never exceed the loads given for the towing equipment fitted to the vehicle. For your safety and the vehicle's durability, all mandatory equipment must be fitted. Otherwise you may void the New Vehicle Warranty, to the extent that Holden considers the overloading or missing equipment to have affected the specifications or quality of the vehicle.

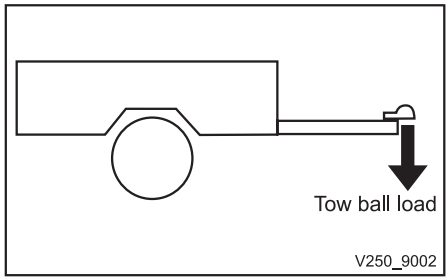
MAXIMUM TOWING CAPACITIES (KG) – BRAKED TRAILER

Engine	2.5 litre petrol	2.0 litre diesel
Braked	1,200	1,200
Unbraked	750	750

WARNING
Holden towing equipment is recommended where it is available. Where it is not available, no recommendation is made as to the make of equipment which should be used. Holden will not accept liability for defects occurring in towing equipment not marketed by Holden or for defects in the vehicle arising from the use of such equipment or for loss or injury caused by use of such equipment. The use of such equipment may void your New Vehicle Warranty, to the extent that Holden considers the non-recommended equipment affects the specifications or quality of your Holden vehicle. It is inadvisable to mix and match different brands of towing equipment, as equipment is usually designed as an integrated package.

TOWING cont.

Recommended procedure for attaching a trailer



When a trailer is hitched to the vehicle, it places a weight on the tow bar. This weight is called the 'tow ball load'.

If the tow ball load is too light or too heavy, the steering and handling of the vehicle may be affected.

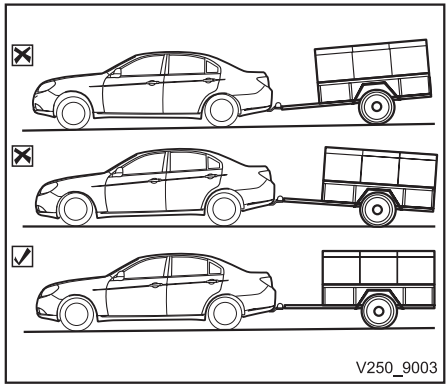
As a general guideline, for single axle trailers, the ball load should be approximately 10 % of the loaded trailer mass. For heavy trailers with more than one axle, the ball load should be in the range of 5 % - 10 % of the loaded trailer mass.

Note If the tow ball load exceeds 120 kg refer to mandatory equipment in the *Towing equipment* table further on in this chapter.

The tow ball load can be adjusted by correctly packing the contents of the trailer. For example, by moving items forwards or backwards within the trailer so as to change the balance of the trailer.

Check the tow ball load before coupling the trailer to the towing vehicle.

If the attitude of the vehicle is compromised, adjust the vehicle and trailer load within the specifications to improve the attitude. If the vehicles attitude cannot be corrected, use a load distribution hitch.



TOWING cont.

TOWING EQUIPMENT

Tow load	Tow ball load	Mandatory equipment
Up to 750 kg	Less than or equal to 120 kg.	Holden 1,200 kg rated tow bar.
		Holden trailer wiring harness.
Up to 750 kg	More than 120 kg.	Holden 1,200 kg rated tow bar.
		Holden trailer wiring harness.
		Load distribution hitch.
Between 750 kg and 1,200 kg	Less than or equal to 120 kg.	Holden 1,200 kg rated tow bar.
		Holden trailer wiring harness.
		Brakes on the trailer.
Between 750 kg and 1,200 kg	More than 120 kg.	Load distribution hitch.
		Holden 1,200 kg rated tow bar.
		Holden trailer wiring harness.
		Brakes on the trailer.

Note

1. A load distribution hitch transfers load to the vehicles front wheels aiding steering and brake performance.
2. At no time may the maximum towing capacity exceed the maximums specified. Refer to *Maximum towing capacity* previously in this chapter.
3. At no time may the total front or rear axle load exceed the maximums specified. Refer to *Loading the vehicle* previously in this chapter.

TOWING cont.

TOWING PRECAUTIONS

- When heavily loading the vehicle or when towing, the tyres should be inflated to the maximum recommended pressure. Refer to *Tyres* in chapter 7 for tyre placard location and information about tyre pressures.
- Ensure the load distribution hitch is correctly distributing the tow ball load. Refer to *Towing equipment* previously in this chapter.
- Tighten the tow ball retaining nut to 140 Nm (Newton metres) and check the torque frequently.
- Vehicles handle differently when towing. It is a good idea to make a couple of short distance trips with the trailer before setting off on a longer journey.
- Have the vehicle correctly maintained and serviced.
- Have the trailer maintained and serviced, with particular attention to the condition of the brakes, tyres, suspension, wheel bearings, lighting and the tow coupling.
- Use an extended-arm mirror on both sides of the vehicle if necessary.
- Headlamps may need re-aiming after the loaded trailer has been hitched, particularly if a load distribution hitch is not used.
- Use a lower gear and the brakes, when descending steep hills.
- Do not use axle-mounted hitches as this will damage the vehicle.
- Ensure that no part of the tow bar (including the tongue or tow ball) obscures the vehicle's licence plate. If necessary, remove the tow bar tongue when it is not in use.
- If a tow bar is removed:

  Be certain to have any mounting holes in the underbody properly sealed to prevent the possible entry of exhaust fumes, dust and water.

Trailer brakes

- Trailer brakes are mandatory on trailers weighing 750 kg and over when loaded. The brakes on the trailer must be designed to cope with the braking requirements of that trailer under all towing conditions, without adversely affecting the brakes on the vehicle.
- Consult the appropriate regulatory body in your State or Territory for the legal requirements of trailer brakes.

Running-in when towing

It is recommended that the new vehicle be driven for at least 1,500 km before towing. If the vehicle must tow before this, do not exceed 80 km/h. The same applies if the vehicle is fitted with a new or reconditioned engine or transmission.

Vehicle maintenance

More frequent vehicle maintenance is required when using the vehicle to tow. Refer to the Service/warranty booklet in the vehicle's glovebox.

NOTES

CHAPTER 10

Cleaning

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Exterior cleaning.....10-5

*The asterisk signifies equipment options not in all vehicles, model variants, engine options, optional equipment and Genuine Holden Accessories (and Parts).

INTERIOR CLEANING

WARNING
Many cleaning products are toxic, flammable or may damage the interior. When cleaning the interior, avoid volatile cleaners such as acetone, lacquer thinners, enamel reducers, nail polish removers, or cleaners such as laundry soaps, bleaches or reducing agents. Never use carbon tetrachloride, petrol or naphtha for any cleaning purpose. Ensure that the vehicle is well ventilated while using any cleaners and always follow the cleaning product manufacturer's recommendations. Water based cleaners, rather than solvent based cleaners, are recommended.

Steam cleaning of seats is not recommended.

UPHOLSTERY

Remove dust and dirt that has accumulated on upholstery every few weeks, more often with constant driving. This can be done readily with a vacuum cleaner. Before attempting to remove spots and stains, it is necessary to determine:

- the type of fabric,
- the nature and age of the stain,
- the effect of the stain removal agent on the upholstery.

Remove stains as soon as possible. If a stain remains for any length of time it may oxidise or set, making removal very difficult, if not impossible.

*VELOUR DOOR TRIM**

Marks on the velour fabric, which extends to the bottom of the door, can be cleaned off using mild, soapy water on a clean cloth, rubbed in the direction of the pile. When dry, use a soft brush to smooth the pile.

VINYL AND HARD TRIM

Wipe over the surface with a dry cloth during the regular cleaning of the vehicle.

WARNING
- Only use a dry cloth to clean around the audio system and electrical switches.
- Care should be exercised when using interior protectant on low gloss surfaces.

Should dirt accumulate and become embedded in the material pattern:

1. Use lukewarm water and soap to work up thick suds on a piece of cheesecloth and apply to the surface.
2. Repeat using only a damp cloth and no soap.
3. Wipe dry with a soft cloth. The above cleaning instructions also apply to the rubber floor mats.

INTERIOR CLEANING cont.

CLOTH

To clean seats upholstered with cloth, observe the following instructions:

- Remove loose dirt and dust with a vacuum cleaner or soft brush.
- DO NOT use a whisk broom or a coarse hair brush.
- For normal soiling, sponge lightly with warm water containing a mild detergent. Rub the fabric lightly and, if necessary, sponge again to remove any stubborn stains. Soak up excess fluid with a dry cloth. A good quality velour fabric and vinyl cleaner may be used, but should be used sparingly.

CARPET

Thoroughly brush or vacuum the carpet. In many instances the carpet may require no further cleaning. If the carpet is extremely soiled, thoroughly vacuum it to remove loose dirt then, using a good quality velour fabric and vinyl cleaner, clean a small area at a time. After each area is cleaned, remove as much of the cleaner as possible with a vacuum cleaner.

*LEATHER**

To remove surface soil and dirt from leather, clean regularly using a leather revitaliser. Apply using a lint free cloth and rub it onto the leather, do not saturate the leather with the cleaner and do not pour it directly onto the leather. Allow the leather to dry naturally. A mild detergent may be used as an alternative to a leather revitaliser.

For deeply embedded soil and dirt, use a leather cleaner. This should be applied using the same process as leather revitaliser. After using a leather cleaner/revitaliser, apply a leather protector. A leather protector is designed to repel dirt and provides water resistance.

Note

- Clean and protect leather at least twice a year.
- Do not use synthetic cloths or brushes for cleaning the leather as this may damage the leather.
- Do not use solvents as they may damage and/or discolour the leather.
- The leather may shrink and harden if exposed to direct sunlight for extended periods. If possible park in the shade or cover the leather.
- Do not leave items on the leather that may melt and stick to leather, for example, plastic bags.

INTERIOR CLEANING cont.

SEATBELTS

Clean seatbelts only with a mild, non-abrasive soap and lukewarm water. After washing, be sure to thoroughly sponge the washing solution out of the belts.

WARNING
Do not bleach or dye seatbelts as this may severely weaken them.

INTERIOR GLASS

Clean interior glass of the vehicle using a good quality glass cleaner and a clean soft cloth. Take care when cleaning inside the rear window so as not to damage the rear window demister or antenna.

Never use abrasive cleaners on any vehicle glass, as they can cause scratches.

EXTERIOR CLEANING

CARING FOR PAINT

To help preserve that shiny new vehicle finish, pay special attention to correctly treating those conditions that can damage the paint.

- Road bloom:

  If, over a long period of time, oils, dirt, exhaust and other pollutants are allowed to build up, they may combine to affect the paint finish.
- Etching:

  Tree sap, bird droppings, egg white, salt water and other natural deposits can, if allowed to stay on the paint, leave an etching or scarring.
- Pitting:

  Tar spots and some industrial fallout can react chemically and may cause pitting to the surface of the paint.

Note For certain body colours, some variation in gloss and colour may exist in the engine bay or boot and on the underside of the vehicle.

PAINT INSPECTION

Inspect the vehicle regularly for scratch marks, cracks or damaged areas, all of which could develop rust. Repair any deep scratches, cracks or breakdown in the finish without delay. Take care to ensure that any rusting is counteracted immediately, otherwise rust 'creep' will extend beyond the damaged area, particularly in tropical or coastal areas, where the moist, or salt-laden air accelerates rusting. The paint finish of the vehicle gives a very high degree of protection against the weather, but wear and deterioration occur when the vehicle is exposed to elements for prolonged periods. The vehicle therefore should be garaged whenever possible.

To prevent damage of the paint surface, remove foreign matter as soon as possible.

Note Due to the acidity, remove foreign matter such as bird droppings within 24 hours, or sooner if driving in warm conditions.

EXTERIOR CLEANING cont.

WASHING THE VEHICLE

The easiest way to keep the paint looking as new is to keep it clean. A wash once a week will keep the vehicle in good condition. However, it must be washed correctly.

Note

- Never use an automatic wash that requires anything touching the paint (other than water).
- Great care should be taken using automatic or manual high pressure washing devices. Too high a pressure or too close in proximity to the paint or both can damage the paint finish.
- Wash the vehicle once a week to remove build up of any grime on the paint.
- Never wash the vehicle in direct sunlight; find a shady spot to wash the vehicle.

1. Hose the vehicle down from top to bottom with plenty of cold water (in accordance with current water restrictions, if any). This removes any grit or other loose particles and substances. Do not use a sponge or cloth at this point.
2. Fill a bucket with lukewarm water and add no more than two capfuls of gentle detergent. Do not use hot water, strong soap or chemical detergents.
3. To remove bird droppings, soak with a wet sponge for several minutes before washing off. If still persistent, use a solution of 1 litre of water and 110 grams of dissolved baking soda (Bicarbonate of Soda). Rinse the area with clean water.
4. Starting with the roof, use a clean sponge to clean a small section at a time. Do not allow liquid to dry before rinsing off that section with clean water. When all sections are completed, rinse the whole vehicle again with clean water.
5. Dry the vehicle thoroughly with a good quality chamois.

WARNING
Take care when moving the vehicle after washing, in case water has affected the brakes. Applying the brakes lightly will indicate whether they have been affected. To dry them quickly, lightly apply the brakes while maintaining a slow forward speed with a clear area ahead, until brake performance returns to normal.

REMOVING STAINS (GREASE, OIL AND TAR SPOTS)

Washing the vehicle regularly means that most of the harmful substances deposited on the paint are removed before they can cause permanent damage. However, some substances are not easy to remove. If you notice stains on the paint, make sure that you remove them at the earliest possible opportunity.

Grease and oil, and even tar if it's fresh, can be removed from the paint with a little kerosene or turpentine. As a precaution against staining, wash and polish the area as soon as possible after the stain has been removed. A rubbing or cutting compound can be used after a normal wash. Do not do this on a regular basis as it removes paint.

EXTERIOR CLEANING cont.

WARNING

- Some chemical cleaners, used for removing road oils and tars from painted surfaces, have been found to be detrimental to automotive paint.
- Do not spill coolant on the vehicle's exterior surfaces as it can damage the paintwork. If you do, wash it off immediately.
- If petrol is spilt on the paint when refilling, flush off immediately with clean water as petrol has a tendency to stain or soften new paint finish during the weathering out period, particularly when the vehicle is exposed to high temperatures.
- Petrol MUST NOT be used to clean any painted or plastic surfaces.

AIR INTAKES

The intake area between the bonnet and windscreen can collect leaves which impairs air flow into the vehicle. Also, the air intake area below the front bumper can collect leaves and road grime, which impairs engine cooling. Refer to *Exterior checks* in chapter 7. Clear this area of debris whenever the vehicle is washed.

UNDER VEHICLE WASHING

The effects of substances such as salt from road surfaces can cause rust under the vehicle. Hose the underbody with clean water whenever the vehicle is washed. In geographical areas having a heavy concentration of corrosive materials (such as by the sea), it is recommended that the complete underbody be inspected and washed at least once each year, preferably after winter exposure. Pay particular attention to cleaning out the underbody where dirt and other foreign materials may have collected.

POLISHING

Under normal circumstances the paint does not need polishing to retain its shine. A weekly wash is sufficient. However, the use of a good quality polymer glaze approximately every 3 months will reduce the effects of road bloom by removing natural contaminants which can build up on the paint.

WARNING

Do not attempt to apply a polish without first washing the vehicle to remove loose grit, surface dirt, dust or grease.

TYRES

Sponging with cold water is all that is necessary for normal cleaning. Oil and grease should be removed with soap and water or detergent. For tar or other substances, use a mild abrasive, such as mechanic's hand soap or kitchen cleaning powder, if necessary. Thoroughly wash the tyres with clean water to finish. Do not use petrol to clean tyres.

A new tyre look can be restored using a good quality tyre and bumper shine.

EXTERIOR CLEANING cont.

ALLOY WHEELS

To preserve the original appearance of alloy wheels, keep them clean and free from build up of road dirt. A good quality wheel cleaner can be used for cleaning alloy wheels. Do not use abrasive cleaners on alloy wheels, as the painted surface may be damaged.

GLASS CLEANING – GENERAL

Take care not to scratch the glass. If it is cleaned at the same time as the rest of the vehicle, there is a possibility that particles of grit will cause fine scratches. Flush off any mud on the glass when washing the body, but leave the final cleaning and polishing until afterwards. Use a good quality glass cleaner and wash each section of glass in turn, making sure that the water, its container and the sponge are quite clean and free from grit. Clean, old linen cloth is better than new material for polishing glass.

WINDSCREEN

It is important that the windscreen be kept clean so that the wiper blades operate as effectively as possible. Old wiper blades can cause windscreen scratching. Regularly inspect and replace them.

Never use abrasive cleaners to clean glass as they can cause scratches, impairing night vision. After the windscreen has been cleaned with a wet sponge, wipe it over with a soft, lint free cloth or chamois.

Refer to your Holden Dealer for windscreen washer additive.

WIPER BLADES

Oil and road scum thrown up on the windscreen causes smearing when the wipers are switched on and is transferred onto the wiper blades. While many methodically clean the windscreen glass, they often forget to clean the wiper blades. Consequently, smearing of the glass reappears immediately the wiper blades are used. Clean the blades by lifting them off the windscreen and cleaning with a good quality glass cleaner and a clean cloth.

WARNING
Do not operate the wiper blades by hand as this damages the wiper drive mechanism.

If the wiper blades are used to clean dust and dirt from the windscreen in dry conditions, always use the washer system first to wet the windscreen. Ensure that the windscreen washer reservoir is full.

Should the wiper blades freeze to the windscreen, you must lift them off and free them by hand before switching on the wipers.

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